



GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munkrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

RBI- Technical Services

Project Management Consultancy Services

Quality Control Report
For the

Work of: Improvements to Roads, Drains and Drilling
Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

BBMP



#2243, 4th 'A' Cross, Hampinagar
Vijayanagar 2nd Stage, Bangalore-560104
Tel.: 080-23300857 Email: rbtc2@gmail.com

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd Stage, Bengaluru - 560 104. Tel. : 080 - 23300857
Cell : 9448352709 Email : rbtc2@gmail.com



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ISO 9001 - 2015 Certified

To,
Executive Engineer,
Byatarayanapura Division,
BBMP.

Sir,

Sub-Submission of Quality Control Report, Regarding.

We are submitting here with the Quality Control Reports Duly Certifying the
Quality for the work of **Improvements to Roads, Drains and Drilling Borewells in
ward no 05 & 06 of Byatarayanapura Sub Division of Byatarayanapura Division.**

Yours sincerely

P. MUNKRISHNAPPA
B.E., MIE, KES, MIR, MIIB
Proprietor
RBI TECHNICAL SERVICES



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Managing Director - P. Munkrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:30.04.2018

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division of Byatarayanapura Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (40mm down size)

Date of Testing : 29.04.2018

Total Wt. of Aggregates taken in gms= 15000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970
63	0	0	0	100	100
40	455	3.03	3.03	96.97	95-100
20	5685	37.90	40.93	59.07	30-70
10	7215	48.10	89.03	10.97	10-35
4.75	1350	9.00	98.03	1.97	0-5

* Information is furnished by the Customer/Representative

Note:

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RBI -Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Cell : 9448352709 Email : rbtc2@gmail.com



GSTIN No.: 29AELPM3115K1ZP

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:21.08.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division of Byatarayanapura Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (40mm down size)

Date of Testing : 20.08.2019

Total Wt. of Aggregates taken in gms= 15000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970
63	0	0	0	100	100
40	435	2.90	2.90	97.10	95-100
20	5675	37.83	40.73	59.27	30-70
10	7205	48.03	88.77	11.23	10-35
4.75	1450	9.67	98.43	1.57	0-5

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RBI -Technical Services

(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:23.08.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (20mm down size)

Date of Testing : 22.08.2019

Total Wt. of Aggregates taken in gms= 10000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970
40	0	0	0	100	100
20	300	3.00	3.00	97.00	95-100
10	6495	64.95	67.95	32.05	25-55
4.75	3150	31.50	99.45	0.55	0-10

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RBI -Technical Services

(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:03.05.2018

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (20mm down size)

Date of Testing : 02.05.2018

Total Wt. of Aggregates taken in gms= 10000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970
40	0	0	0	100	100
20	385	3.85	3.85	96.15	95-100
10	6505	65.05	68.90	31.10	25-55
4.75	3020	30.20	99.10	0.90	0-10

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RBI -Technical Services

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RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:30.04.2018

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Fine Aggregates (M Sand)

Date of Testing : 29.04.2018

Total Wt. of Aggregates taken in gms= 500

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 For Zone-II
10	0	0	0	100	100
4.75	30.2	6.04	6.04	94.0	90-100
2.36	44.5	8.90	14.94	85.1	75-100
1.18	132.1	26.42	41.36	58.6	55-90
0.6	69.5	13.90	55.26	44.7	35-59
0.3	103.6	20.72	75.98	24.0	8-30
0.15	100.5	20.10	96.08	3.9	0-20

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RBI -Technical Services

(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:30.08.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Fine Aggregates (M Sand)

Date of Testing : 20.08.2019

Total Wt. of Aggregates taken in gms= 500

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per IS 383-1970 For Zone-II
10	0	0	0	100	100
4.75	32.5	6.50	6.50	93.5	90-100
2.36	44.9	8.98	15.48	84.5	75-100
1.18	132.6	26.52	42.00	58.0	55-90
0.6	70.2	14.04	56.04	44.0	35-59
0.3	102.5	20.50	76.54	23.5	8-30
0.15	100.4	20.08	96.62	3.4	0-20

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RBI -Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:01.05.2018

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Method of test : IS-4031 (Part -5), (Part - 4), (Part - 6) 1988

Type of Sample : Cement, OPC 43 grade

Date of Testing : 29.04.2018 to 01.05.2018

PHYSICAL PROPERTIES

SLNo	Name of the test	Test Results	Requirements as per IS: 8112-1989
1	Consistency	29.50%	Not Mentioned
2	Initial Setting Time	150 minutes	Not Less than 30 Minutes
3	Final Setting Time	380 minutes	Not More than 600 Minutes
4	Compressive Strength		
	3 Days (72 hrs)	25.00 Mpa	Shall not be less than 23.0 Mpa

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RBI -Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:23.08.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Method of test : IS-4031 (Part -5), (Part - 4), (Part - 6) 1988

Type of Sample : Cement, OPC 43 grade

Date of Testing : 20.08.2019 to 23.08.2019

PHYSICAL PROPERTIES

SLNo	Name of the test	Test Results	Requirements as per IS: 8112-1989
1	Consistency	30.00%	Not Mentioned
2	Initial Setting Time	120 minutes	Not Less than 30 Minutes
3	Final Setting Time	390 minutes	Not More than 600 Minutes
4	Compressive Strength		
	3 Days (72 hrs)	25.50 Mpa	Shall not be less than 23.0 Mpa

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RBI -Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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Job No:RBITS/MT/BBMP/2021-22

Date: 11.09.2019

CC KERB STONE (CORE) TEST REPORT

Name of Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of work : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

No. of Sample Tested : 03

Date of Testing : 10.09.2019

Technical Reference : IS-516-1959 (Reaffirmed 2008), SP-24:1983.

SL No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m ³)	H / D	Correct ion factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm ²)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm ²)	Equivalent Cube Compressive Strength (N/mm ²)
1	65.00	105.00	0.805	2310.41	1.62	0.960	47.50	14.31	15.46	14.84	18.55
2	65.00	110.00	0.810	2219.09	1.69	0.960	47.00	14.16	15.30	14.69	18.36
3	65.00	105.00	0.805	2310.41	1.62	0.960	46.00	13.86	14.97	14.37	17.97

Information is furnished by the Agency

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RBI-TECHNICAL SERVICES

RBI -Technical Services (CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Date: 11.09.2019

Job No: RBITS/MT/BBMP/2021-22

CC KERB STONE (CORE) TEST REPORT

Name of Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of work : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

No. of Sample Tested : 03

Date of Testing : 10.09.2019

Technical Reference : IS:516-1959 (Reaffirmed 2008), SP-24:1983.

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m ³)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm ²)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm ²)	Equivalent Cube Compressive Strength (N/mm ²)
1	65.00	110.00	0.800	2191.70	1.69	0.960	47.50	14.31	15.46	14.84	18.55
2	65.00	110.00	0.800	2191.70	1.69	0.960	48.50	14.62	15.79	15.15	18.94
3	65.00	105.00	0.805	2310.41	1.62	0.960	47.00	14.16	15.30	14.69	18.36

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RBI-TECHNICAL SERVICES

Proprietor
RBI - Technical Services (CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Date: 30.04.2018

Job No: RBITS/MT/BBMP/2021-22

TEST REPORT

Client Name & address* : Executive Engineer, Byatarayanapura Division, BBMP

*Name of Work: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Date of Testing : 29.04.2018

Sample Type & Size: Solid Cement concrete blocks of size (400X200X100)mm

Reference to BIS codes: IS : 2185 (Part 1) : 2005 Concrete Masonry Specification
Annex -D Clause 9.4 and 10, Compressive strength

1.COMPRESSIVE STRENGTH:

Sample No.	Size of solid block			Area (mm ²)	Failure Load (kN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
	Length mm	Breadth mm	Height mm				
1	400	100	200	40000	195.5	4.9	5.0
2	400	100	200	40000	185.5	4.6	
3	400	100	200	40000	195.6	4.9	
4	400	100	200	40000	200.2	5.0	
5	400	100	200	40000	202.2	5.1	
6	400	100	200	40000	203.8	5.1	
7	400	100	200	40000	214.5	5.4	
8	400	100	200	40000	195.5	4.9	

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RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



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TEST REPORT

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*Name of Work: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
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Reference to BIS codes: IS : 2185 (Part 1) : 2005 Concrete Masonry Specification
Annex -D Clause 9.4 and 10, Compressive strength

1.COMPRESSIVE STRENGTH:

Sample No.	Size of solid block			Area (mm ²)	Failure Load (kN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
	Length mm	Breadth mm	Height mm				
1	400	100	200	40000	195.5	4.9	5.0
2	400	100	200	40000	185.5	4.6	
3	400	100	200	40000	195.6	4.9	
4	400	100	200	40000	200.2	5.0	
5	400	100	200	40000	202.2	5.1	
6	400	100	200	40000	203.8	5.1	
7	400	100	200	40000	214.5	5.4	
8	400	100	200	40000	195.5	4.9	

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RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



RBI - Technical Services

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:11.04.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (25mm down size)

Date of Testing : 10.04.2019

Total Wt. of Aggregates taken in gms= 10000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per Morth Table No:600-1
26.5	0	0	0	100	100
19	495	4.95	4.95	95.05	80-100
9.5	2030	20.30	25.25	74.75	55-75
4.75	1850	18.50	43.75	56.25	35-60
0.600	3950	39.50	83.25	16.75	10-35
0.075	1205	12.05	95.30	4.70	0-8

* Information is furnished by the Customer/Representative

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RBI - Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES

Assistant Engineer

Assistant Executive Engineer

Proprietor

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd State, Bengaluru - 560 104. Tel. : 080 - 23300857
Cell : 9448352709 Email : rbltc2@gmail.com



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:19.12.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (25mm down size)

Date of Testing : 18.12.2019

Total Wt. of Aggregates taken in gms= 10000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per Morth Table No:600-1
26.5	0	0	0	100	100
19	465	4.65	4.65	95.35	80-100
9.5	2150	21.50	26.15	73.85	55-75
4.75	1835	18.35	44.50	55.50	35-60
0.600	3925	39.25	83.75	16.25	10-35
0.075	1225	12.25	96.00	4.00	0-8

* Information is furnished by the Customer/Representative

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RBI - Technical Services
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Assistant Engineer

Assistant Executive Engineer

Proprietor

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Road - Building - Irrigation Material Testing Laboratory
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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:13.04.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (25mm down size)

Date of Testing : 12.04.2019

Total Wt. of Aggregates taken in gms= 10000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per Morth Table No:600-1
26.5	0	0	0	100	100
19	485	4.85	4.85	95.15	80-100
9.5	2055	20.55	25.40	74.60	55-75
4.75	1845	18.45	43.85	56.15	35-60
0.600	3985	39.85	83.70	16.30	10-35
0.075	1215	12.15	95.85	4.15	0-8

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RBI - Technical Services
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Assistant Engineer

Assistant Executive Engineer

Proprietor

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:21.12.2019

TEST REPORT

Client Name & address* : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06
of Byatarayanapura Sub Division.

Name of the test : Sieve Analysis

Method of test : IS : 2386 Part 1 -1963

Type of Aggregate : Coarse Aggregates (25mm down size)

Date of Testing : 20.12.2019

Total Wt. of Aggregates taken in gms= 10000

Is Sieve Size in mm	Weight Retained (gm)	Retained Weight in %	Cumulative Retained Weight in %	Cumulative Weight Passing in %	Spec.Limits as per Morth Table No:600-1
26.5	0	0	0	100	100
19	445	4.45	4.45	95.55	80-100
9.5	2165	21.65	26.10	73.90	55-75
4.75	1845	18.45	44.55	55.45	35-60
0.600	3985	39.85	84.40	15.60	10-35
0.075	1235	12.35	96.75	3.25	0-8

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RBI - Technical Services
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RBI-TECHNICAL SERVICES

Assistant Engineer

Assistant Executive Engineer

Proprietor

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Report No: RBITS/MT/001/2017-18

Date: 05.05.2018

TEST REPORT ON REINFORCEMENT STEEL

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of the work : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Date of Test : 04.05.2018

Technical Reference : IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Weight per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm ²	Tensile strength (Ultimate stress) N/mm ²	Elongation percent gauge length		
1	8	0.397	501	544	14.50	O.K	O.K
2	10	0.619	505	550	15.00	O.K	O.K

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NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Report No: RBITS/MT/001/2017-18

Date: 27.08.2019

TEST REPORT ON REINFORCEMENT STEEL

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of the work : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Date of Test : 26.08.2019

Technical Reference : IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Weight per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm ²	Tensile strength (Ultimate stress) N/mm ²	Elongation percent gauge length		
1	8	0.399	502	545	14.00	O.K	O.K
2	10	0.618	510	552	15.50	O.K	O.K

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Report No: RBITS/MT/001/2017-18

Date: 03.09.2019

TEST REPORT ON REINFORCEMENT STEEL

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of the work : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Date of Test : 02.09.2019

Technical Reference : IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Weight per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm ²	Tensile strength (Ultimate stress) N/mm ²	Elongation percent gauge length		
1	8	0.398	505	540	14.50	O.K	O.K
2	10	0.620	512	545	15.50	O.K	O.K

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 03.06.2018

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 Nos

Technical Reference : IS: 516-1959

* Grade of Concrete : M20 (Raft Concrete)

Sl. No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	06.05.2018	03.06.2018	8.150	500.0	22.22	22.60
2	06.05.2018	03.06.2018	8.045	512.0	22.76	
3	06.05.2018	03.06.2018	8.023	513.2	22.81	

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RBI-Technical Services
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Proprietor

Assistant Engineer

Assistant Executive Engineer



Road - Building - Irrigation Material Testing Laboratory

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

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Job No:RBITS/MT/BBMP/2021-22

Date: 05.06.2018

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 No.s

Technical Reference : IS: 516-1959

* Grade of Concrete : M20 (Wall Concrete)

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	08.05.2018	05.06.2018	8.145	526.0	23.38	23.35
2	08.05.2018	05.06.2018	8.023	523.2	23.25	
3	08.05.2018	05.06.2018	8.015	526.6	23.40	

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RBI-Technical Services
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RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 27.09.2019

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 No.s

Technical Reference : IS: 516-1959

* Grade of Concrete : M20 (Raft Concrete)

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	30.08.2019	27.09.2019	8.000	532.0	23.64	23.44
2	30.08.2019	27.09.2019	8.012	526.0	23.38	
3	30.08.2019	27.09.2019	8.016	524.5	23.31	

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Proprietor

Assistant Engineer

Assistant Executive Engineer



Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 04.07.2019

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 No.s

Technical Reference : IS: 516-1959

* Grade of Concrete : M20 (Wall Concrete)

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	06.09.2019	04.07.2019	8.470	521.0	23.16	22.95
2	06.09.2019	04.07.2019	8.045	513.0	22.80	
3	06.09.2019	04.07.2019	8.023	515.0	22.89	

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RBI-Technical Services
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Proprietor

Assistant Engineer

Assistant Executive Engineer



Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 23.05.2019

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 No.s

Technical Reference : IS: 516-1959

* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	25.04.2019	23.05.2019	8.014	726.0	32.27	32.30
2	25.04.2019	23.05.2019	8.078	730.0	32.44	
3	25.04.2019	23.05.2019	8.023	724.4	32.20	

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Proprietor

Assistant Engineer

Assistant Executive Engineer



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
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ISO 9001 - 2015 Certified

Date: 26.05.2019

Job No:RBITS/MT/BBMP/2021-22

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.
Name of Test : Compressive strength of concrete cubes
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm²
No. of Cubes Tested : 3 No.s
Technical Reference : IS: 516-1959
* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	28.04.2019	26.05.2019	8.012	732.0	32.53	32.26
2	28.04.2019	26.05.2019	8.023	721.0	32.04	
3	28.04.2019	26.05.2019	8.026	724.5	32.20	

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RBI-Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd State, Bengaluru - 560 104. Tel : 080 - 23300857
Cell : 9448352709 Email : rbitc2@gmail.com

GSTIN No.: 29AELPM3115K1ZP



RBI - Technical Services

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 24.01.2020

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.
Name of Test : Compressive strength of concrete cubes
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm²
No. of Cubes Tested : 3 No.s
Technical Reference : IS: 516-1959
* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	27.12.2019	24.01.2020	8.000	715.0	31.78	31.96
2	27.12.2019	24.01.2020	8.010	721.0	32.04	
3	27.12.2019	24.01.2020	8.023	721.4	32.06	

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RBI-Technical Services
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Proprietor

Assistant Engineer

Assistant Executive Engineer



GSTIN No.: 29AELPM3115K1ZP

RBI - Technical Services

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Job No:RBITS/MT/BBMP/2021-22

Date: 26.05.2019

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.
Name of Test : Compressive strength of concrete cubes
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm²
No. of Cubes Tested : 3 No.s
Technical Reference : IS: 516-1959
* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	28.04.2019	26.05.2019	8.014	702.0	31.20	31.52
2	28.04.2019	26.05.2019	8.012	712.0	31.64	
3	28.04.2019	26.05.2019	8.056	713.5	31.71	

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RBI-Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd State, Bengaluru - 560 104. Tel : 080 - 23300857
Cell : 9448352709 Email : rbitc2@gmail.com

GSTIN No.: 29AELPM3115K1ZP



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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 24.01.2020

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.
Name of Test : Compressive strength of concrete cubes
Size of cubes : 150mmx150mmx150mm
Cross Sectional Area : 22500 mm²
No. of Cubes Tested : 3 No.s
Technical Reference : IS: 516-1959
* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	27.12.2019	24.01.2020	8.000	726.0	32.27	32.21
2	27.12.2019	24.01.2020	8.000	723.0	32.13	
3	27.12.2019	24.01.2020	8.001	725.5	32.24	

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RBI-Technical Services
(CONSULTANT)

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Proprietor

Assistant Engineer

Assistant Executive Engineer



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 27.01.2020

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 No.s

Technical Reference : IS: 516-1959

* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	30.12.2019	27.01.2020	8.012	726.0	32.27	32.30
2	30.12.2019	27.01.2020	8.023	725.5	32.24	
3	30.12.2019	27.01.2020	8.059	728.8	32.39	

* Information is furnished by the Client

Note:

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Proprietor

Assistant Engineer

Assistant Executive Engineer



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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 27.01.2020

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 No.s

Technical Reference : IS: 516-1959

* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	30.12.2019	27.01.2020	8.150	740.0	32.89	32.50
2	30.12.2019	27.01.2020	8.046	732.0	32.53	
3	30.12.2019	27.01.2020	8.023	721.5	32.07	

* Information is furnished by the Client

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Proprietor

Assistant Engineer

Assistant Executive Engineer

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 27.01.2020

TEST REPORT

*Client Name & address : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work* : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Name of Test : Compressive strength of concrete cubes

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

No. of Cubes Tested : 3 No.s

Technical Reference : IS: 516-1959

* Grade of Concrete : M30

Sl.No.	* Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)	Average Compressive strength (N/mm ²)
1	30.12.2019	27.01.2020	8.014	726.0	32.27	32.29
2	30.12.2019	27.01.2020	8.012	725.0	32.22	
3	30.12.2019	27.01.2020	8.056	728.9	32.40	

* Information is furnished by the Client

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Proprietor

Assistant Engineer

Assistant Executive Engineer

Quality Control Report For

Wert Mix Macadam



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Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI - Technical Services

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.
Source of Sample : Sample Supplied by Customer
Source of Sample : Hot Mix Plant
Date of Sample Testing : 08.10.2018 to 09.10.2018
Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.50%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- Results relate only to the sample (s) under test in as received condition and applicable parameter (s).
- The sample will be stored upto one month from the date of issue of test report unless otherwise specified.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer
10-05

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI - Technical Services

ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.
Source of Sample : Sample Supplied by Customer
Source of Sample : Hot Mix Plant
Date of Sample Testing : 08.10.2018 to 09.10.2018
Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	24.00%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- Results relate only to the sample (s) under test in as received condition and applicable parameter (s).
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RBI - Technical Services
(CONSULTANT)

Assistant Engineer
10-05

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

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ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.
Source of Sample : Sample Supplied by Customer
Source of Sample : Hot Mix Plant
Date of Sample Testing : 08.10.2018 to 09.10.2018
Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	23.10%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- Results relate only to the sample (s) under test in as received condition and applicable parameter (s).
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RBI - Technical Services
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Assistant Engineer
10-05

Assistant Executive Engineer

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Date:09.10.2018

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ATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.
Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.
Source of Sample : Sample Supplied by Customer
Source of Sample : Hot Mix Plant
Date of Sample Testing : 08.10.2018 to 09.10.2018
Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.00%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

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Assistant Engineer
10-05

Assistant Executive Engineer

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RBI - Technical Services ATTERBERG LIMITS TEST FOR WMM MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 08.11.2018 to 09.11.2018

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.40%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

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Client : Executive Engineer,
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Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 08.11.2018 to 09.11.2018

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	23.00%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

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Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 08.11.2018 to 09.11.2018

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	23.00%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

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Date:09.11.2018

RBI - Technical Services ATTERBERG LIMITS TEST FOR WMM MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 08.11.2018 to 09.11.2018

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.40%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

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Proprietor

Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:09.11.2018

RBI - Technical ServicesATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 08.11.2018 to 09.11.2018

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.40%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

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RBI - Technical Services
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RBI-TECHNICAL SERVICES

Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:05.11.2019

RBI - Technical ServicesATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 04.11.2019 to 05.11.2019

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.50%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- 1 Results relate only to the sample (s) under test in as received condition and applicable parameter (s)
- 2 The sample will be stored upto one month from the date of issue of test report unless otherwise specified.

RBI - Technical Services
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Assistant Engineer

Assistant Executive Engineer



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Job No:RBITS/MT/BBMP/2021-22

Date:05.11.2019

RBI - Technical ServicesATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 04.11.2019 to 05.11.2019

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.00%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- 1 Results relate only to the sample (s) under test in as received condition and applicable parameter (s)
- 2 The sample will be stored upto one month from the date of issue of test report unless otherwise specified.

RBI - Technical Services
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RBI-TECHNICAL SERVICES

Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:05.11.2019

RBI - Technical ServicesATTERBERG LIMITS TEST FOR WMM
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 04.11.2019 to 05.11.2019

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	22.50%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- 1 Results relate only to the sample (s) under test in as received condition and applicable parameter (s)
- 2 The sample will be stored upto one month from the date of issue of test report unless otherwise specified.

RBI - Technical Services
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Assistant Engineer

Assistant Executive Engineer



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Job No:RBITS/MT/BBMP/2021-22

Date:12.11.2019

RBI - Technical Services**ATTERBERG LIMITS TEST FOR WMM**
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 11.11.2019 to 12.11.2019

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	24.50%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- Results relate only to the sample (s) under test in as received condition and applicable parameter (s).
- The sample will be stored upto one month from the date of issue of test report unless otherwise specified.

RBI -Technical Services
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RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
10-6

Assistant Executive Engineer
10-6



GSTIN No.: 29AELPM3115K12P

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:12.11.2019

RBI - Technical Services**ATTERBERG LIMITS TEST FOR WMM**
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 11.11.2019 to 12.11.2019

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	23.00%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- Results relate only to the sample (s) under test in as received condition and applicable parameter (s).
- The sample will be stored upto one month from the date of issue of test report unless otherwise specified.

RBI -Technical Services
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Proprietor

Assistant Engineer
10-6

Assistant Executive Engineer
10-6

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Job No:RBITS/MT/BBMP/2021-22

Date:12.11.2019

RBI - Technical Services**ATTERBERG LIMITS TEST FOR WMM**
MORTH TABLE-400-13

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Name of Work : Improvements to Roads, Drains and Drilling Borewells in ward no
05 & 06 of Byatarayanapura Sub Division.

Source of Sample : Sample Supplied by Customer

Source of Sample : Hot Mix Plant

Date of Sample Testing : 11.11.2019 to 12.11.2019

Material : WMM

Sl. No.	Name of Test	Test Method	Test Results
1	Liquid Limit	IS : 2720-1985 Part 5 RA : 2010	24.10%
3	Plasticity index	IS : 2720-1985 Part 5 RA : 2010	NP

Remarks:

- Results relate only to the sample (s) under test in as received condition and applicable parameter (s).
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Proprietor

Assistant Engineer
10-6

Assistant Executive Engineer
10-6



GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI - Technical Services**GRADATION FOR WMM**
MORTH TABLE-400-11

Name of the Work : Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of
Byatarayanapura Sub Division.

Client : Executive Engineer,
Byatarayanapura Division, BBMP.

Source of Sample : Hot Mix Plant

Date of Testing : 08.10.2018

Material : WMM

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	385	3.85	3.85	96.15	95-100
22.4	3150	31.5	35.4	64.7	60-80
11.2	1795	17.95	53.3	46.7	40-60
4.75	1650	16.5	69.8	30.2	25-40
2.36	1150	11.5	81.3	18.7	15-30
0.600	825	8.25	89.6	10.5	8-22
0.075	500	5	94.6	5.5	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI -Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
10-6

Assistant Executive Engineer
10-6

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI- Technical Services

GRADATION FOR WMM

MORTH TABLE-400-II

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 08.10.2018
Material WMM

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	345	3.45	3.45	96.55	95-100
22.4	3160	31.6	35.1	65.0	60-80
11.2	1845	18.45	53.5	46.5	40-60
4.75	1545	15.45	69.0	31.1	25-40
2.36	1500	15	84.0	16.1	15-30
0.600	800	8	92.0	8.1	8-22
0.075	500	5	97.0	3.1	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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RBI- Technical Services

GRADATION FOR WMM

MORTH TABLE-400-II

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 08.10.2018
Material WMM

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	384	3.84	3.84	96.16	95-100
22.4	3165	31.65	35.5	64.5	60-80
11.2	1795	17.95	53.4	46.6	40-60
4.75	1405	14.05	67.5	32.5	25-40
2.36	1505	15.05	82.5	17.5	15-30
0.600	800	8	90.5	9.5	8-22
0.075	500	5	95.5	4.5	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI- Technical Services

GRADATION FOR WMM

MORTH TABLE-400-II

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 08.10.2018
Material WMM

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	300	3	3	97.00	95-100
22.4	3230	32.3	35.3	64.7	60-80
11.2	1845	18.45	53.8	46.3	40-60
4.75	1495	14.95	68.7	31.3	25-40
2.36	1345	13.45	82.2	17.9	15-30
0.600	950	9.5	91.7	8.3	8-22
0.075	550	5.5	97.2	2.8	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date: 09.11.2018

RBI- Technical Services

GRADATION FOR WMM

MORTH TABLE-400-II

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 08.11.2018
Material WMM

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	320	3.2	3.2	96.80	95-100
22.4	3201	32.01	35.2	64.8	60-80
11.2	1845	18.45	53.7	46.3	40-60
4.75	1450	14.5	68.2	31.8	25-40
2.36	1350	13.5	81.7	18.3	15-30
0.600	950	9.5	91.2	8.8	8-22
0.075	405	4.05	95.2	4.8	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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RBI - Technical Services

GRADATION FOR WMM
MORTH TABLE-400-11

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Client Executive Engineer,
Byatarayanapura Division, BBMP.

Source of Sample Hot Mix Plant

Date of Testing 08.11.2018

Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	330	3.3	3.3	96.70	95-100
22.4	3120	31.2	34.5	65.5	60-80
11.2	1805	18.05	52.6	47.5	40-60
4.75	1546	15.46	68.0	32.0	25-40
2.36	1450	14.5	82.5	17.5	15-30
0.600	800	8.0	90.5	9.5	8-22
0.075	495	4.95	95.5	4.5	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services
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Assistant Engineer

Assistant Executive Engineer

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Proprietor

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RBI - Technical Services

GRADATION FOR WMM
MORTH TABLE-400-11

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Client Executive Engineer,
Byatarayanapura Division, BBMP.

Source of Sample Hot Mix Plant

Date of Testing 08.11.2018

Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	300	3	3	97.00	95-100
22.4	3120	31.2	34.2	65.8	60-80
11.2	1505	15.05	49.3	50.8	40-60
4.75	1350	13.5	62.8	37.3	25-40
2.36	1495	14.95	77.7	22.3	15-30
0.600	800	8.0	85.7	14.3	8-22
0.075	595	5.95	91.7	8.3	0-8

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RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 09.11.2018

RBI - Technical Services

GRADATION FOR WMM
MORTH TABLE-400-11

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Client Executive Engineer,
Byatarayanapura Division, BBMP.

Source of Sample Hot Mix Plant

Date of Testing 08.11.2018

Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	400	4	4	96.00	95-100
22.4	3205	32.05	36.1	64.0	60-80
11.2	1950	19.5	55.6	44.5	40-60
4.75	1450	14.5	70.1	30.0	25-40
2.36	1595	15.95	86.0	14.0	15-30
0.600	600	6.0	92.0	8.0	8-22
0.075	495	4.95	97.0	3.1	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 05.11.2019

RBI - Technical Services

GRADATION FOR WMM
MORTH TABLE-400-11

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.

Client Executive Engineer,
Byatarayanapura Division, BBMP.

Source of Sample Hot Mix Plant

Date of Testing 04.11.2019

Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	305	3.05	3.05	96.95	95-100
22.4	3420	34.2	37.3	62.8	60-80
11.2	1650	16.5	53.8	46.3	40-60
4.75	1495	14.95	68.7	31.3	25-40
2.36	1350	13.5	82.2	17.8	15-30
0.600	950	9.5	91.7	8.3	8-22
0.075	585	5.85	97.6	2.5	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 05.11.2019

RBI- Technical Services**GRADATION FOR WMM****MORTH TABLE-400-II**

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 04.11.2019
Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	350	3.5	3.5	96.50	95-100
22.4	3302	33.02	36.5	63.5	60-80
11.2	1495	14.95	51.5	48.5	40-60
4.75	1785	17.85	69.3	30.7	25-40
2.36	1595	15.95	85.3	14.7	15-30
0.600	650	6.5	91.8	8.2	8-22
0.075	595	5.95	97.7	2.3	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 05.11.2019

RBI- Technical Services**GRADATION FOR WMM****MORTH TABLE-400-II**

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 04.11.2019
Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	345	3.45	3.45	96.55	95-100
22.4	3450	34.5	38.0	62.1	60-80
11.2	1505	15.05	53.0	47.0	40-60
4.75	1740	17.4	70.4	29.6	25-40
2.36	1495	14.95	85.4	14.7	15-30
0.600	600	6.0	91.4	8.6	8-22
0.075	500	5	96.4	3.6	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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**RBI - Technical Services**

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 12.11.2019

RBI- Technical Services**GRADATION FOR WMM****MORTH TABLE-400-II**

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 11.11.2019
Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	410	4.1	4.1	95.90	95-100
22.4	3125	31.25	35.4	64.7	60-80
11.2	1505	15.05	50.4	49.6	40-60
4.75	1548	15.48	65.9	34.1	25-40
2.36	1350	13.5	79.4	20.6	15-30
0.600	800	8.0	87.4	12.6	8-22
0.075	505	5.05	92.4	7.6	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date: 12.11.2019

RBI- Technical Services**GRADATION FOR WMM****MORTH TABLE-400-II**

Name of the Work Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Client Executive Engineer, Byatarayanapura Division, BBMP.
Source of Sample Hot Mix Plant
Date of Testing 11.11.2019
Material WMM

Oven dry Wt.(gms) 10000

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	400	4	4	96.00	95-100
22.4	3360	33.6	37.6	62.4	60-80
11.2	1495	14.95	52.6	47.5	40-60
4.75	1505	15.05	67.6	32.4	25-40
2.36	1305	13.05	80.7	19.4	15-30
0.600	795	8.0	88.6	11.4	8-22
0.075	500	5	93.6	6.4	0-8

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	08.10.2018
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	320.0	320.0	321.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	263.2	262.1	262.2
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	55.80	57.50	57.90
Aggregate Impact value (%)	(Wc/Wa)100	17.4	18.0	18.0
Average Aggregate Impact value (%)			17.8	18.0
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
K. P. S.

Assistant Executive Engineer

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	08.10.2018
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	322.0	322.0	321.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	262.9	263.5	262.4
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.40	58.30	58.60
Aggregate Impact value (%)	(Wc/Wa)100	18.1	18.1	18.3
Average Aggregate Impact value (%)			18.2	18.3
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
K. P. S.

Assistant Executive Engineer

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd State, Bengaluru - 560 104. Tel : 080 - 23300857
Cell : 9448352709 Email : rbitc2@gmail.com



RBI - Technical Services

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	08.10.2018
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	322.0	322.0	320.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	263.1	262.9	261.5
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.20	58.40	58.50
Aggregate Impact value (%)	(Wc/Wa)100	18.1	18.1	18.3
Average Aggregate Impact value (%)			18.2	18.3
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
K. P. S.

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:09.10.2018

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	08.10.2018
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	321.0	322.0	321.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	262.5	263.4	262.8
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	57.90	58.20	58.00
Aggregate Impact value (%)	(Wc/Wa)100	18.0	18.1	18.1
Average Aggregate Impact value (%)			18.1	18.1
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
K. P. S.

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:09.11.2018

RBI- Technical Services

AGGREGATE IMPACT VALUE

(IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	08.11.2018
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	323.0	321.0	323.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	264.2	263.1	263.5
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.10	57.90	58.60
Aggregate Impact value (%)	(Wc/Wa)100	18.0	18.0	18.1
Average Aggregate Impact value (%)		18.1		
Specified Aggregate Impact value (%)		30.0		

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
D-6

Assistant Executive Engineer



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.11.2018

RBI- Technical Services

AGGREGATE IMPACT VALUE

(IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	08.11.2018
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	322.0	322.0	322.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	262.9	263.4	263.1
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.20	57.90	58.20
Aggregate Impact value (%)	(Wc/Wa)100	18.1	18.0	18.1
Average Aggregate Impact value (%)		18.0		
Specified Aggregate Impact value (%)		30.0		

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
D-6

Assistant Executive Engineer

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RBI - Technical Services

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.11.2018

RBI- Technical Services

AGGREGATE IMPACT VALUE

(IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	08.11.2018
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	322.0	321.0	322.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	263.2	263.4	263.2
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.00	57.60	58.40
Aggregate Impact value (%)	(Wc/Wa)100	18.0	17.9	18.1
Average Aggregate Impact value (%)		18.0		
Specified Aggregate Impact value (%)		30.0		

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
D-6

Assistant Executive Engineer



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:05.11.2019

RBI- Technical Services

AGGREGATE IMPACT VALUE

(IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	04.11.2019
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	322.0	321.0	322.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	263.0	263.2	263.5
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.10	57.20	58.00
Aggregate Impact value (%)	(Wc/Wa)100	18.0	17.8	18.0
Average Aggregate Impact value (%)		18.0		
Specified Aggregate Impact value (%)		30.0		

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
D-6

Assistant Executive Engineer

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RBI - Technical Services

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ISO 9001 - 2015 Certified

GSTIN No.: 29AELPM3115K12P

Job No:RBITS/MT/BBMP/2021-22

Date:05.11.2019

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	04.11.2019
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(W _a)	320.0	322.0	322.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(W _b)	262.3	263.0	263.5
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(W _c)	57.20	58.10	58.20
Aggregate Impact value (%)	(W _c /W _a)100	17.9	18.0	18.1
Average Aggregate Impact value (%)			18.0	
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)
RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
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ISO 9001 - 2015 Certified

GSTIN No.: 29AELPM3115K12P

Job No:RBITS/MT/BBMP/2021-22

Date:05.11.2019

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

(IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	04.11.2019
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	322.0	322.0	323.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	263.5	263.8	263.5
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.00	58.20	58.70
Aggregate Impact value (%)	(Wc/Wa)100	18.0	18.1	18.2
Average Aggregate Impact value (%)			18.1	
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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RBI - Technical Services

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ISO 9001 - 2015 Certified

GSTIN No.: 29AELPM3115K12P

Job No:RBITS/MT/BBMP/2021-22

Date:12.11.2019

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

(IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	11.11.2019
Material	Wet Mix Macadam

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	323.0	323.0	324.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	264.0	263.9	263.8
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.20	58.10	59.50
Aggregate Impact value (%)	(Wc/Wa)100	18.0	18.0	18.4
Average Aggregate Impact value (%)			18.1	
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)
RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
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GSTIN No.: 29AELPM3115K12P

Job No:RBITS/MT/BBMP/2021-22

Date:12.11.2019

RBI- Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

(IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.	Client
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.	
Source of Sample	Hot Mix Plant	
Date of Testing	11.11.2019	
Material	Wet Mix Macadam	

Description		Trails		
		1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa)	323.0	323.0	325.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb)	264.6	264.3	264.9
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc)	58.40	58.50	60.10
Aggregate Impact value (%)	(Wc/Wa)100	18.1	18.1	18.5
Average Aggregate Impact value (%)			18.2	
Specified Aggregate Impact value (%)			30.0	

RBI -Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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RBI - Technical Services

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:12.11.2019

RBI - Technical Services AGGREGATE IMPACT VALUE (IS : 2386 Part - 4)

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	Hot Mix Plant
Date of Testing	11.11.2019
Material	Wet Mix Macadam

Description	1	2	3
Wt.Of stone pieces(dry) passing IS Sieve 12.5mm but retained in IS Sieve 10mm(gm)	(Wa) 321.0	322.0	326.0
Wt.Of the fraction retained in IS Sieve 2.36mm after the impact test(gm)	(Wb) 263.6	264.0	264.6
Wt.Of the fraction Passed in IS Sieve 2.36mm after the impact test(gm)	(Wc) 57.40	58.00	60.50
Aggregate Impact value (%)	(Wc/Wa)100	17.9	18.0
Average Aggregate Impact value (%)		18.2	18.6
Specified Aggregate Impact value (%)		30.0	

RBI - Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Cell : 9448352709 Email : rbt2@gmail.com

Date:09.10.2018

Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.										
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division										
Type of Mix	WMM										
Source of Sample	Hot Mix Plant										
Date of Testing	08.10.2018										
Size of Aggregates	Retained on IS		Weight of Fraction		Thickness	Weight of aggregate in		Length	Weight of aggregate in		
	sieve, mm	40, mm	consisting of atleast	gauge size,		each fraction passing	gauge size,		each fraction retained on		
Passing through IS sieve, mm	6.3	50	W ₁	W ₂	mm	thickness gauge, g	mm	mm	mm	length gauge, g	
			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							
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			W ₁	W ₂							
			W ₁	W ₂							
			W ₁	W ₂							

RBI - Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer

Date:09.10.2018

Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.										
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.										
Type of Mix	WMM										
Source of Sample	Hot Mix Plant										
Date of Testing	08.10.2018										
Size of Aggregates	Retained on IS sieve, mm	Weight of Fraction consisting of allast 200 pieces, g		Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g		Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g			
	Passing through IS sieve, mm	W ₁	W ₂	mm	W ₁	W ₂	mm	X ₁	X ₂		
50	20	W ₁	23.9	23.9	W ₁	0	--	X ₁	0		
75	40	W ₂	0	27	W ₂	0	81	X ₂	0		
150	25	W ₃	0	19.5	W ₃	0	58	X ₃	0		
300	12.5	W ₄	0	16.95	W ₄	0	--	X ₄	0		
600	7.5	W ₅	2.205	13.5	W ₅		40.5	X ₅	140		
1180	4.75	W ₆	19.50	10.8	W ₆	165	32.4	X ₆	115		
2500	2.5	W ₇	900	8.55	W ₇	145	25.5	X ₇	110		
	10	W ₈	845	6.75	W ₈	150	20.2	X ₈	100		
	6.3	W ₉	135	4.89	W ₉	20	14.7	X ₉	10		

RBI - Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer

Date:09.10.2018

Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.											
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.											
Type of Mix	WMM											
Source of Sample	Hot Mix Plant											
Date of Testing	08.10.2018											
	Size of Aggregates											
	Passing through IS sieve, mm	75	47.5	25	15	7.5	4.75	2.5	1.18	0.75	0.425	
	Retained on IS sieve, mm	63	50	40	25	20	16	12.5	10	7.5	6.3	
	Weight of aggregate in each fraction passing thickness gauge, g	W ₁	W ₂	W ₃	W ₄	W ₅	W ₆	W ₇	W ₈	W ₉	W ₁₀	
	Length gauge size, mm	81	58	40.5	32.4	25.5	20.2	14.7	10	7.5	5	
	Weight of aggregate in each fraction retained on length gauge, g	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	X ₉	X ₁₀	
	Flakiness Index	8.07%										
	Elongation Index	8.23%										
	Combined Flakiness & Elongation Index	16.40%										
	Comments	Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%										

RBI - Technical Services (CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer

Date:09.11.2018

Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	08.11.2018

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	58	X ₂
40	W ₃	19.5	W ₃	58	X ₃
37.5	W ₄	16.95	W ₄	40.5	X ₄
25	W ₅	13.5	W ₅	32.4	X ₅
20	W ₆	10.8	W ₆	25.5	X ₆
16	W ₇	8.55	W ₇	20.2	X ₇
12.5	W ₈	6.75	W ₈	14.7	X ₈
10	W ₉	4.89	W ₉	25	X ₉

Flakiness Index 8.53%
Elongation Index 9.14%
Combined Flakiness & Elongation Index 17.67%
Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
Byatarayanapura Sub Division

Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	08.10.2018

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	58	X ₂
40	W ₃	19.5	W ₃	58	X ₃
37.5	W ₄	16.95	W ₄	40.5	X ₄
25	W ₅	13.5	W ₅	32.4	X ₅
20	W ₆	10.8	W ₆	25.5	X ₆
16	W ₇	8.55	W ₇	20.2	X ₇
12.5	W ₈	6.75	W ₈	14.7	X ₈
10	W ₉	4.89	W ₉	25	X ₉

Flakiness Index 7.58%
Elongation Index 8.85%
Combined Flakiness & Elongation Index 16.43%
Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
Byatarayanapura Sub Division

Date:09.11.2018

Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	08.11.2018

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	58	X ₂
40	W ₃	19.5	W ₃	58	X ₃
37.5	W ₄	16.95	W ₄	40.5	X ₄
25	W ₅	13.5	W ₅	32.4	X ₅
20	W ₆	10.8	W ₆	25.5	X ₆
16	W ₇	8.55	W ₇	20.2	X ₇
12.5	W ₈	6.75	W ₈	14.7	X ₈
10	W ₉	4.89	W ₉	25	X ₉

Flakiness Index 7.13%
Elongation Index 8.17%
Combined Flakiness & Elongation Index 15.31%
Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
Byatarayanapura Sub Division

Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	08.11.2018

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	58	X ₂
40	W ₃	19.5	W ₃	58	X ₃
37.5	W ₄	16.95	W ₄	40.5	X ₄
25	W ₅	13.5	W ₅	32.4	X ₅
20	W ₆	10.8	W ₆	25.5	X ₆
16	W ₇	8.55	W ₇	20.2	X ₇
12.5	W ₈	6.75	W ₈	14.7	X ₈
10	W ₉	4.89	W ₉	20	X ₉

Flakiness Index 7.77%
Elongation Index 9.08%
Combined Flakiness & Elongation Index 16.84%
Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

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(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
Byatarayanapura Sub Division

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	04.11.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of at least 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	50	23.9	W ₁	—	X ₁
50	40	27	W ₂	81	X ₂
40	25	19.5	W ₃	58	X ₃
31.5	25	16.95	W ₄	—	X ₄
25	20	13.5	W ₅	40.5	X ₅
20	16	10.8	W ₆	32.4	X ₆
16	12.5	8.55	W ₇	25.5	X ₇
12.5	10	6.75	W ₈	20.2	X ₈
10	6.3	4.89	W ₉	14.7	X ₉

Flakiness Index 8.45%

Elongation Index 8.62%

Combined Flakiness & Elongation Index 17.06%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
10-10Assistant Executive Engineer
10-10Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	04.11.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of at least 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	50	23.9	W ₁	—	X ₁
50	40	27	W ₂	81	X ₂
40	25	19.5	W ₃	58	X ₃
31.5	25	16.95	W ₄	—	X ₄
25	20	13.5	W ₅	40.5	X ₅
20	16	10.8	W ₆	32.4	X ₆
16	12.5	8.55	W ₇	25.5	X ₇
12.5	10	6.75	W ₈	20.2	X ₈
10	6.3	4.89	W ₉	14.7	X ₉

Flakiness Index 8.98%

Elongation Index 9.16%

Combined Flakiness & Elongation Index 18.14%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
10-10Assistant Executive Engineer
10-10Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	08.11.2018

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of at least 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	50	23.9	W ₁	—	X ₁
50	40	27	W ₂	81	X ₂
40	25	19.5	W ₃	58	X ₃
31.5	25	16.95	W ₄	—	X ₄
25	20	13.5	W ₅	40.5	X ₅
20	16	10.8	W ₆	32.4	X ₆
16	12.5	8.55	W ₇	25.5	X ₇
12.5	10	6.75	W ₈	20.2	X ₈
10	6.3	4.89	W ₉	14.7	X ₉

Flakiness Index 7.49%

Elongation Index 8.59%

Combined Flakiness & Elongation Index 16.08%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
10-10Assistant Executive Engineer
10-10Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	04.11.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of at least 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	50	23.9	W ₁	—	X ₁
50	40	27	W ₂	81	X ₂
40	25	19.5	W ₃	58	X ₃
31.5	25	16.95	W ₄	—	X ₄
25	20	13.5	W ₅	40.5	X ₅
20	16	10.8	W ₆	32.4	X ₆
16	12.5	8.55	W ₇	25.5	X ₇
12.5	10	6.75	W ₈	20.2	X ₈
10	6.3	4.89	W ₉	14.7	X ₉

Flakiness Index 7.79%

Elongation Index 8.37%

Combined Flakiness & Elongation Index 16.16%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer
10-10Assistant Executive Engineer
10-10

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	11.11.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g		Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g		Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g	
	W ₁	W ₂		W ₃	W ₄		X ₁	X ₂
Passing through IS sieve, mm 63	50	40	27	0	0	81	X ₁	X ₂
50	40	25	19.5	0	0	58	X ₃	0
40	25	25	16.95	0	0	58	X ₄	0
31.5	20	20	13.5	165	0	40.5	X ₅	135
25	16	16	10.8	165	165	32.4	X ₆	150
20	12.5	12.5	8.55	145	145	25.5	X ₇	140
16	10	10	6.75	125	125	20.2	X ₈	100
12.5	6.3	6.3	4.89	25	25	14.7	X ₉	5

Flakiness Index 7.23%

Elongation Index 8.65%

Combined Flakiness & Elongation Index 15.88%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	11.11.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g		Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g		Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g	
	W ₁	W ₂		W ₃	W ₄		X ₁	X ₂
Passing through IS sieve, mm 63	50	40	27	0	0	81	X ₁	0
50	40	25	19.5	0	0	58	X ₃	0
40	25	25	16.95	0	0	58	X ₄	0
31.5	20	20	13.5	165	0	40.5	X ₅	162
25	16	16	10.8	165	165	32.4	X ₆	145
20	12.5	12.5	8.55	145	145	25.5	X ₇	135
16	10	10	6.75	130	130	20.2	X ₈	110
12.5	6.3	6.3	4.89	20	20	14.7	X ₉	15

Flakiness Index 7.63%

Elongation Index 9.41%

Combined Flakiness & Elongation Index 17.04%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
12-6Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	WMM
Source of Sample	Hot Mix Plant
Date of Testing	11.11.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g		Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g		Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g	
	W ₁	W ₂		W ₃	W ₄		X ₁	X ₂
Passing through IS sieve, mm 63	50	40	27	0	0	81	X ₁	0
50	40	25	19.5	0	0	58	X ₃	0
40	25	25	16.95	0	0	58	X ₄	0
31.5	20	20	13.5	175	0	40.5	X ₅	162
25	16	16	10.8	175	175	32.4	X ₆	145
20	12.5	12.5	8.55	150	150	25.5	X ₇	135
16	10	10	6.75	130	130	20.2	X ₈	110
12.5	6.3	6.3	4.89	20	20	14.7	X ₉	15

Flakiness Index 8.16%

Elongation Index 9.75%

Combined Flakiness & Elongation Index 17.91%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for WMM is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
12-6



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.12.2018

Aggregate Gradation Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.12.2018
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Total Weight of Sample:		5000		gm		
Sieve Size (mm)	Weight Retained, gm	% Retained	Cumulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	100	2.00	2.00	98.00	90-100	
19	1196	23.92	25.92	74.08	71-95	
13.2	800	16.00	41.92	58.08	56-80	
4.75	832	16.64	58.56	41.44	38-54	
2.36	565	11.30	69.86	30.14	28-42	
0.300	635	12.70	82.56	17.44	7-21	
0.075	500	10.00	92.56	7.44	2-8	

Sieve Size (mm)	Weight Retained, gm	% Retained	Cumulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	125	2.50	2.50	97.50	90-100	
19	1300	26.00	28.50	71.50	71-95	
13.2	745	14.90	43.40	56.60	56-80	
4.75	600	12.00	55.40	44.60	38-54	
2.36	700	14.00	69.40	30.60	28-42	
0.300	635	12.70	82.10	17.90	7-21	
0.075	595	11.90	94.00	6.00	2-8	

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.12.2018

Specific Gravity And Water Absorption Test

IS: 2386 (Part III) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.12.2018
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source/Location	: Hot Mix Plant

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W1 g	2440	2450	
2	Weight of basket suspended in water	W2 g	1220	1220	
3	Weight of saturated aggregate in water	(W1 - W2) = Ws g	1220	1230	
4	Weight of saturated surface dry aggregate in air	W3 g	2015	2015	
5	Weight of water equal to the volume of the aggregate	(W3 - WS) g	795	785	
6	Weight of oven dried aggregate	W4 g	2013	2011	
7	Specific Gravity	W4/(W3-WS)	2.532	2.562	2.547
8	Apparent Specific gravity	W4/(W4-WS)	2.538	2.575	2.557
9	Water Absorption	((W3-W4)*100)/W4	0.10%	0.20%	0.15%

Comments: Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd State, Bengaluru - 560 104. Tel.: 080 - 23300857
Cell: 9448352709 Email: rbltc2@gmail.com



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:09.12.2

Aggregate Shape Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.12.2018
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Size of Aggregates		Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g			
Passing through IS sieve, mm	Retained on IS sieve, mm								
63	50	W ₁	0	33.9	W ₁	0	67	X ₁	0
50	40	W ₂	0	27	W ₂	0	61	X ₂	0
40	31.5	W ₃	0	21.5	W ₃	0	64.4	X ₃	0
31.5	25	W ₄	0	16.95	W ₄	0	—	X ₄	0
25	20	W ₅	0	13.5	W ₅	0	255	X ₅	0
20	16	W ₆	0	10.8	W ₆	0	32.4	X ₆	0
16	12.5	W ₇	2405	8.55	W ₇	150	25.6	X ₇	140
12.5	10	W ₈	1605	6.75	W ₈	150	20.2	X ₈	115
10	6.3	W ₉	300	4.89	W ₉	5	14.7	X ₉	12
			4310			305			267

Flakiness Index 7.08%

Elongation Index 6.19%

Combined Flakiness & Elongation Index 13.27%

Comments: Maximum allowable Combined Flakiness and Elongation Index for Dense Graded Bituminous Macadam is 30%

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

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GSTIN No.: 29AELPM3115K1ZP



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:02.12.2019

RBI - Technical Services

Test Report on Bitumen

IS: 73:2013

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam are as follows:

Sl. No	Description	Test Result	Requirement as per IS:73:2013 Table No. I
1	Penetration at 25°C, 100g, 5s, 0.1mm, Min	65	60
2	Softening point, R&B °C, Min	58	45
3	Ductility at 25°C, cm Min	>100	50
4	Flash Point, °C, Min	245	220

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
⇒ Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

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Road - Building - Irrigation Material Testing Laboratory

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:02.12.2019

RBI- Technical Services

IS: 2386 (Part IV) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Sl No.	Details	Trial No.	
		1	2
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	363	362
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	86.2	86.5
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	276.4	275.5
4	Aggregate Impact value = percent fines		
	100* (W_2/W_1) percent	23.75	23.90
5	AVERAGE	23.82	

Comments: Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27%

RBI-TECHNICAL SERVICES

Proprietor

RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer



GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:02.12.2019

Aggregate Gradation Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Total Weight of Sample: 5000 gm						
Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	105	2.10	2.10	97.90	90-100	
19	1205	24.10	26.20	73.80	71-95	
13.2	802	16.04	42.24	57.76	56-80	
4.75	815	16.30	58.54	41.46	38-54	
2.36	585	11.70	70.24	29.76	28-42	
0.300	700	14.00	84.24	15.76	7-21	
0.075	505	10.10	94.34	5.66	2-8	

Total Weight of Sample		5000		gm		
Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	130	2.60	2.60	97.40	90-100	
19	1295	25.90	28.50	71.50	71-95	
13.2	750	15.00	43.50	56.50	56-80	
4.75	605	12.10	55.60	44.40	38-54	
2.36	715	14.30	69.90	30.10	28-42	
0.300	620	12.40	82.30	17.70	7-21	
0.075	500	10.00	92.30	7.70	2-8	

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

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Proprietor

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GSTIN No.: 29AELPM3115K12P

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:02.12.2019

Aggregate Shape Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Size of Aggregates	Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	50	W_1	0	33.9	w_1	0
50	40	W_2	0	27	w_2	0
40	31.5	W_3	0	21.5	w_3	0
31.5	25	W_4	0	16.95	w_4	0
25	20	W_5	0	13.5	w_5	0
20	16	W_6	0	10.8	w_6	0
16	12.5	W_7	2505	8.55	w_7	150
12.5	10	W_8	1750	6.75	w_8	150
10	6.3	W_9	350	4.89	w_9	5
		4605			305	322

Flakiness Index 6.62%

Elongation Index 6.99%

Combined Flakiness & Elongation Index 13.62%

Comments: Maximum allowable Combined Flakiness and Elongation Index for Dense Graded Bituminous Macadam is 30%

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Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:02.12.2019

Specific Gravity And Water Absorption Test

IS: 2386 (Part III) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source/Location	: Hot Mix Plant

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W_1 g	2505	2495	
2	Weight of basket suspended in water	W_2 g	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1285	1275	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2015	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_s)$ g	730	740	
6	Weight of oven dried aggregate	W_4 g	2013	2011	
7	Specific Gravity	$W_4/(W_3 - W_s)$	2.758	2.718	2.738
8	Apparent Specific gravity	$W_4/(W_4 - W_s)$	2.765	2.732	2.749
9	Water Absorption	$((W_3 - W_4) * 100) / W_4$	0.10%	0.20%	0.15%

Comments: Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%

RBI - Technical Services
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Assistant Engineer

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RBI-TECHNICAL SERVICES

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Job No:RBITS/MT/BBMP/2021-22

Date:04.12.2019

RBI- Technical Services

Test Report on Bitumen
IS 73: 2013

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 03.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam are as follows:

Sl. No	Description	Test Result	Requirement as per IS:73:2013 Table No. 1
1	Penetration at 25°C, 100g, 5s, 0.1mm, Min	66	60
2	Softening point, R&B °C, Min	59	45
3	Ductility at 25°C, cm Min	>100	50
4	Flash Point, °C, Min	240	220

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported immediately.

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Assistant Engineer

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ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:04.12.2019

Aggregate Gradation Test
IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 03.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Total Weight of Sample: 5000 gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cumulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	120	2.40	2.40	97.60	90-100	
19	1305	26.10	28.50	71.50	71-95	
13.2	800	16.00	44.50	55.50	56-80	
4.75	850	17.00	61.50	38.50	38-54	
2.36	500	10.00	71.50	28.50	28-42	
0.300	695	13.90	85.40	14.60	7-21	
0.075	495	9.90	95.30	4.70	2-8	

Total Weight of Sample: 5000 gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cumulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	125	2.50	2.50	97.50	90-100	
19	1295	25.90	28.40	71.60	71-95	
13.2	700	14.00	42.40	57.60	56-80	
4.75	605	12.10	54.50	45.50	38-54	
2.36	725	14.50	69.00	31.00	28-42	
0.300	700	14.00	83.00	17.00	7-21	
0.075	485	9.70	92.70	7.30	2-8	

RBI - Technical Services
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Assistant Engineer

Assistant Executive Engineer



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Job No:RBITS/MT/BBMP/2021-22

Date:04.12.2019

RBI- Technical Services

IS: 2386 (Part IV) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 03.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Sl No.	Details	Trial No.	
		1	2
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	363	363
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	86.4	86.6
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	276.4	275.5
4	Aggregate Impact value = percent fines $100 * (W_2/W_1)$ percent	23.80	23.86
5	AVERAGE	23.83	

Comments: Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27%

RBI-TECHNICAL SERVICES

RBI - Technical Services

Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:04.12.21

Aggregate Shape Test
IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 03.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Size of Aggregates		Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g			
Passing through IS sieve, mm	Retained on IS sieve, mm					x_1			
63	50	W_1	0	33.9	w_1	0	67	x_1	0
50	40	W_2	0	27	w_2	0	61	x_2	0
40	31.5	W_3	0	21.5	w_3	0	64.4	x_3	0
31.5	25	W_4	0	16.95	w_4	0	—	x_4	0
25	20	W_5	0	13.5	w_5	0	255	x_5	0
20	16	W_6	0	10.8	w_6	0	32.4	x_6	0
16	12.5	W_7	2495	8.55	w_7	165	25.6	x_7	185
12.5	10	W_8	1805	6.75	w_8	150	20.2	x_8	125
10	6.3	W_9	300	4.89	w_9	15	14.7	x_9	12
		4600			330				322

Flakiness Index 7.17%

Elongation Index 7.00%

Combined Flakiness & Elongation Index 14.17%

Comments: Maximum allowable Combined Flakiness and Elongation Index for Dense Graded Bituminous Macadam is 30%

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer



GSTIN No.: 29AELPM3115K1ZP

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Job No:RBITS/MT/BBMP/2021-22

Date:04.12.21

Specific Gravity And Water Absorption Test

IS: 2386 (Part III) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 03.12.2019
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source/Location	: Hot Mix Plant

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W1 g	2460	2480	
2	Weight of basket suspended in water	W2 g	1220	1220	
3	Weight of saturated aggregate in water	(W1 - W2) = Ws g	1240	1260	
4	Weight of saturated surface dry aggregate in air	W3 g	2015	2015	
5	Weight of water equal to the volume of the aggregate	(W3 - Ws) g	775	755	
6	Weight of oven dried aggregate	W4 g	2012	2013	
7	Specific Gravity	W4/(W3-Ws)	2.596	2.666	2.631
8	Apparent Specific gravity	W4/(W4-Ws)	2.606	2.673	2.640
9	Water Absorption	((W3-W4)*100)/W4	0.15%	0.10%	0.12%

Comments: Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%

RBI - Technical Services
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Assistant Engineer

Assistant Executive Engineer



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Job No:RBITS/MT/BBMP/2021-22

Date:02.09.2020

RBI - Technical Services

Test Report on Bitumen

IS: 73: 2013

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam are as follows:

Sl. No	Description	Test Result	Requirement as per IS:73:2013 Table No. 1
1	Penetration at 25°C, 100g, 5s, 0.1mm, Min	62	60
2	Softening point, R&B °C, Min	58	45
3	Ductility at 25°C, cm Min	>100	50
4	Flash Point, °C, Min	245	220

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

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Date:02.09.2020

RBI - Technical Services

IS: 2386 (Part IV) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Sl. No.	Details	Trial No.	
		1	2
1	Total weight of aggregate sample filling the cylindrical measure = W ₁ g	363	363
2	Weight of aggregate passing 2.36 mm sieve after the test = W ₂ g	86.2	86.7
3	Weight of aggregate retained 2.36 mm sieve after the test = W ₃ g	276.4	275.5
4	Aggregate Impact value = percent fines 100* (W ₂ /W ₁) percent	23.75	23.88
5	AVERAGE	23.82	

Comments: Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27%

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Assistant Engineer

Assistant Executive Engineer



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Job No:RBITS/MT/BBMP/2021-22

Date:02.09.20

Aggregate Shape Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Size of Aggregates		Weight of Fraction consisting of at least 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
Passing through IS sieve, mm	Retained on IS sieve, mm					
63	50	W ₁	0	33.9	W ₁	0
50	40	W ₂	0	27	W ₂	0
40	31.5	W ₃	0	21.5	W ₃	0
31.5	25	W ₄	0	16.95	W ₄	0
25	20	W ₅	0	13.5	W ₅	0
20	16	W ₆	0	10.8	W ₆	0
16	12.5	W ₇	2505	8.55	W ₇	195
12.5	10	W ₈	1795	6.75	W ₈	165
10	6.3	W ₉	305	4.89	W ₉	15
		4605		375		340

Flakiness Index 8.14%

Elongation Index 7.38%

Combined Flakiness & Elongation Index 15.53%

Comments: Maximum allowable Combined Flakiness and Elongation Index for Dense Graded Bituminous Macadam is 30%

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Date: 02.09.21

Job No: RBITS/MT/BBMP/2021-22

Specific Gravity And Water Absorption Test

IS: 2386 (Part III) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 01.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source/Location	: Hot Mix Plant

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W1 g	2400	2420	
2	Weight of basket suspended in water	W2 g	1220	1220	
3	Weight of saturated aggregate in water	(W1 - W2) = Ws g	1180	1200	
4	Weight of saturated surface dry aggregate in air	W3 g	2015	2015	
5	Weight of water equal to the volume of the aggregate	(W3 - Ws) g	835	815	
6	Weight of oven dried aggregate	W4 g	2011	2013	
7	Specific Gravity	W4/(W3-Ws)	2.408	2.470	2.439
8	Apparent Specific gravity	W4/(W4-Ws)	2.420	2.476	2.448
9	Water Absorption	((W3-W4)*100)/W4	0.20%	0.10%	0.15%

Comments: Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%

RBI - Technical Services
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Assistant Engineer

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ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 07.09.2020

RBI- Technical Services

IS: 2386 (Part IV) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 06.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Sl No.	Details	Trial No.	
		1	2
1	Total weight of aggregate sample filling the cylindrical measure = W ₁ g	361	361
2	Weight of aggregate passing 2.36 mm sieve after the test = W ₂ g	86.5	86.2
3	Weight of aggregate retained 2.36 mm sieve after the test = W ₃ g	273.6	274.5
4	Aggregate Impact value = percent fines 100* (W ₂ /W ₁) percent	23.96	23.88
5	AVERAGE	23.92	

Comments: Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27%

RBI - Technical Services

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Job No: RBITS/MT/BBMP/2021-22

Date: 07.09.2020

RBI- Technical Services

Test Report on Bitumen

IS: 73: 2013

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 06.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam are as follows:

Sl. No	Description	Test Result	Requirement as per IS:73:2013 Table No. 1
1	Penetration at 25°C, 100g, 5s, 0.1mm, Min	65	60
2	Softening point, R&B °C, Min	52	45
3	Ductility at 25°C, cm Min	>100	50
4	Flash Point, °C, Min	235	220

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported immediately.

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ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 07.09.2020

Aggregate Gradation Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 06.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Total Weight of Sample: 5000 gm						
Sieve Size (mm)	Weight Retained, gm	% Retained	Cumulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	135	2.70	2.70	97.30	90-100	
19	1215	24.30	27.00	73.00	71-95	
13.2	845	16.80	43.80	56.10	56-80	
4.75	785	15.70	59.60	40.40	38-54	
2.36	485	9.70	69.30	30.70	28-42	
0.300	705	14.10	83.40	16.60	7-21	
0.075	475	9.50	92.90	7.10	2-8	

Total Weight of Sample		5000		gm		
Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	115	2.30	2.30	97.70	90-100	
19	1285	25.70	28.00	72.00	71-95	
13.2	725	14.50	42.50	57.50	56-80	
4.75	615	12.30	54.80	45.20	38-54	
2.36	780	15.60	70.40	29.60	28-42	
0.300	685	13.70	84.10	15.90	7-21	
0.075	475	9.50	93.60	6.40	2-8	

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Job No:RBITS/MT/BBMP/2021-22

Date:07.09.22

Aggregate Shape Test IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 06.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Size of Aggregates									
Passing through IS sieve, mm	Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge g			
63	50	W ₁	0	33.9	w ₁	0	67	x ₁	0
50	40	W ₂	0	27	w ₂	0	61	x ₂	0
40	31.5	W ₃	0	21.5	w ₃	0	64.4	x ₃	0
31.5	25	W ₄	0	16.95	w ₄	0	—	x ₄	0
25	20	W ₅	0	13.5	w ₅	0	255	x ₅	0
20	16	W ₆	0	10.8	w ₆	0	32.4	x ₆	0
16	12.5	W ₇	2520	8.55	w ₇	185	25.6	x ₇	175
12.5	10	W ₈	1850	6.75	w ₈	155	20.2	x ₈	145
10	6.3	W ₉	315	4.89	w ₉	10	14.7	x ₉	10
		4685			350				330

Flakiness Index 7.47%

Elongation Index 7.04%

Combined Flakiness & Elongation Index 14.51%

Comments: Maximum allowable Combined Flakiness and Elongation Index for Dense Graded Bituminous Macadam is 30%

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Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Date:07.09.22

Specific Gravity And Water Absorption Test IS: 2386 (Part III) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 06.09.2020
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source/Location	: Hot Mix Plant

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W1 g	2425	2440	
2	Weight of basket suspended in water	W2 g	1220	1220	
3	Weight of saturated aggregate in water	(W1 - W2) = Ws g	1205	1220	
4	Weight of saturated surface dry aggregate in air	W3 g	2015	2015	
5	Weight of water equal to the volume of the aggregate	(W3 - WS) g	810	795	
6	Weight of oven dried aggregate	W4 g	2010	2012	
7	Specific Gravity	W4/(W3-WS)	2.481	2.531	2.506
8	Apparent Specific gravity	W4/(W4-Ws)	2.497	2.540	2.519
9	Water Absorption	((W3-W4)*100)/W4	0.25%	0.15%	0.20%

Comments: Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%

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Job No:RBITS/MT/BBMP/2021-22

Date:09.07.2022

RBI - Technical Services Test Report on Bitumen IS: 73:2013

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam are as follows:

Sl. No	Description	Test Result	Requirement as per IS:73:2013 Table No. 1
1	Penetration at 25°C, 100g, 5s, 0.1mm, Min	64	60
2	Softening point, R&B °C, Min	50	45
3	Ductility at 25°C, cm Min	>100	50
4	Flash Point, °C, Min	225	220

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.

⇒ Any Query regarding the report must be reported immediately.

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Assistant Engineer

Assistant Executive Engineer



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Job No:RBITS/MT/BBMP/2021-22

Date:09.07.2022

RBI - Technical Services

IS: 2386 (Part IV) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Sl. No.	Details	Trial No.	
		1	2
1	Total weight of aggregate sample filling the cylindrical measure = W ₁ g	359	360
2	Weight of aggregate passing 2.36 mm sieve after the test = W ₂ g	85.5	86.3
3	Weight of aggregate retained 2.36 mm sieve after the test = W ₃ g	272.9	273
4	Aggregate Impact value = percent fines 100 * (W ₂ /W ₁) percent	23.82	23.97
5	AVERAGE	23.89	

Comments: Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27%

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Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Aggregate Gradation Test

IS: 2386 (Part I) 1963

Date:09.07.2022

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Total Weight of Sample: 5000 gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cumulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	115	2.30	2.30	97.70	90-100	
19	1225	24.50	26.80	73.20	71-95	
13.2	835	16.70	43.50	56.50	56-80	
4.75	795	15.90	59.40	40.60	38-54	
2.36	495	9.90	69.30	30.70	28-42	
0.300	720	14.40	83.70	16.30	7-21	
0.075	480	9.60	93.30	6.70	2-8	

Total Weight of Sample: 5000 gm

Sieve Size (mm)	Weight Retained, gm	% Retained	Cumulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	125	2.50	2.50	97.50	90-100	
19	1235	24.70	27.20	72.80	71-95	
13.2	715	14.30	41.50	58.50	56-80	
4.75	625	12.50	54.00	46.00	38-54	
2.36	765	15.30	69.30	30.70	28-42	
0.300	695	13.90	83.20	16.80	7-21	
0.075	485	9.70	92.90	7.10	2-8	

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Job No:RBITS/MT/BBMP/2021-22

Specific Gravity And Water Absorption Test

IS: 2386 (Part III) 1963

Date:09.07.22

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source/Location	: Hot Mix Plant

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W1 g	2440	2445	
2	Weight of basket suspended in water	W2 g	1220	1220	
3	Weight of saturated aggregate in water	(W1 - W2) = Ws g	1220	1225	
4	Weight of saturated surface dry aggregate in air	W3 g	2015	2015	
5	Weight of water equal to the volume of the aggregate	(W3 - Ws) g	795	790	
6	Weight of oven dried aggregate	W4 g	2005	2006	
7	Specific Gravity	W4/(W3-Ws)	2.522	2.539	2.531
8	Apparent Specific gravity	W4/(W4-Ws)	2.554	2.569	2.561
9	Water Absorption	((W3-W4)*100)/W4	0.50%	0.45%	0.47%

Comments: Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%

RBI - Technical Services
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Assistant Engineer

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Job No:RBITS/MT/BBMP/2021-22

Aggregate Shape Test

IS: 2386 (Part I) 1963

Date:09.07.22

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 08.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Size of Aggregates	Weight of Fraction retained on IS sieve, mm	Weight of Fraction consisting of at least 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	50	W ₁	0	33.9	W ₁	0
50	40	W ₂	0	27	W ₂	0
40	31.5	W ₃	0	21.5	W ₃	0
31.5	25	W ₄	0	16.95	W ₄	0
25	20	W ₅	0	13.5	W ₅	0
20	16	W ₆	0	10.8	W ₆	0
16	12.5	W ₇	2542	8.55	W ₇	175
12.5	10	W ₈	1825	6.75	W ₈	150
10	6.3	W ₉	320	4.89	W ₉	25
			4687		350	340

Flakiness Index 7.47%

Elongation Index 7.25%

Combined Flakiness & Elongation Index 14.72%

Comments: Maximum allowable Combined Flakiness and Elongation Index for Dense Graded Bituminous Macadam is 30%

RBI - Technical Services
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Job No:RBITS/MT/BBMP/2021-22

RBI - Technical Services

Test Report on Bitumen

IS: 73: 2013

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 10.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

The results of the tests conducted on the bitumen sample using for Dense Graded Bituminous Macadam are as follows:

Sl. No	Description	Test Result	Requirement as per IS:73:2013 Table No. I
1	Penetration at 25°C, 100g, 5s, 0.1mm, Min	62	60
2	Softening point, R&B °C, Min	52	45
3	Ductility at 25°C, cm Min	>100	50
4	Flash Point, °C, Min	230	220

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
⇒ Any Query regarding the report must be reported immediately.

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Job No:RBITS/MT/BBMP/2021-22

Date:11.07.2022

RBI - Technical Services

IS: 2386 (Part IV) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 10.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Sl No.	Details	Trial No.	
		1	2
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	360	361
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	86.5	87.5
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	273.2	272.6
4	Aggregate Impact value = percent fines $100 * (W_2/W_1)$ percent	24.03	24.24
5	AVERAGE	24.13	

Comments: Maximum allowable Aggregate Impact value for Dense Graded Bituminous Macadam is 27%.

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Job No:RBITS/MT/BBMP/2021-22

Date:11.07.2022

Aggregate Gradation Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 10.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Total Weight of Sample:			5000		gm	
Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	120	2.40	2.40	97.60	90-100	
19	1235	24.70	27.10	72.90	71-95	
13.2	825	16.50	43.60	56.40	56-80	
4.75	785	15.70	59.30	40.70	38-54	
2.36	500	10.00	69.30	30.70	28-42	
0.300	725	14.50	83.80	16.20	7-21	
0.075	475	9.50	93.30	6.70	2-8	

Total Weight of Sample: 5000 gm						
Sieve Size (mm)	Weight Retained, gm	% Retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
37.5	0	0	0	100	100	Gradation satisfies Dense Graded Bituminous Macadam Grading-II specification as per MORTH Table No. 500-10
26.5	115	2.30	2.30	97.70	90-100	
19	1245	24.90	27.20	72.80	71-95	
13.2	725	14.50	41.70	58.30	56-80	
4.75	635	12.70	54.40	45.60	38-54	
2.36	755	15.10	69.50	30.50	28-42	
0.300	685	13.70	83.20	16.80	7-21	
0.075	475	9.50	92.70	7.30	2-8	

RBI - Technical Services (CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

RBI - Technical Services

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civl) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:11.07.2022

Aggregate Shape Test

IS: 2386 (Part I) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 10.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source	: Hot Mix Plant

Size of Aggregates	Weight of Fraction consisting of at least 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	50	W_1	0	33.9	W_1
50	40	W_2	0	27	W_2
40	31.5	W_3	0	21.5	W_3
31.5	25	W_4	0	16.95	W_4
25	20	W_5	0	13.5	W_5
20	16	W_6	0	10.8	W_6
16	12.5	W_7	2450	8.55	W_7
12.5	10	W_8	1845	6.75	W_8
10	6.3	W_9	365	4.89	W_9
			4660		365
					335

Flakiness Index 7.83%

Elongation Index 7.19%

Combined Flakiness & Elongation Index 15.02%

Comments: Maximum allowable Combined Flakiness and Elongation Index for Dense Graded Bituminous Macadam is 30%.

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Assistant Engineer

Assistant Executive Engineer

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Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civl) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:11.07.2022

Specific Gravity And Water Absorption Test

IS: 2386 (Part III) 1963

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of Work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Date of Testing	: 10.07.2022
Type of Mix	: Dense Graded Bituminous Macadam
Sample Source/Location	: Hot Mix Plant

Sl. No.	Details	Notation	Test Number		Mean Value
			Test 1	Test 2	
1	Weight of aggregate suspended in water with the basket	W1 g	2430	2427	
2	Weight of basket suspended in water	W2 g	1220	1220	
3	Weight of saturated aggregate in water	(W1 - W2) = Ws g	1210	1207	
4	Weight of saturated surface dry aggregate in air	W3 g	2015	2015	
5	Weight of water equal to the volume of the aggregate	(W3 - WS) g	805	808	
6	Weight of oven dried aggregate	W4 g	2004	2006	
7	Specific Gravity	W4/(W3-WS)	2.489	2.483	2.486
8	Apparent Specific gravity	W4/(W4-WS)	2.524	2.511	2.517
9	Water Absorption	((W3-W4)*100)/W4	0.55%	0.45%	0.50%

Comments: Maximum allowable Aggregate Water absorption value for Dense Graded Bituminous Macadam is 2.0%

RBI - Technical Services (CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

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BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	05.12.2018

Description	Trail 1	Trail 2
1 Weight of Bitumen mix taken before extraction (W1) gms	500	500
2 Weight of Bitumen mix taken after extraction (W2) gms	477	477
3 Difference in weight after extraction (W3) gms= (W1-W2)	23.00	23.00
4 Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.60	4.60
5. Average in %	4.60	

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2022-23

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	05.12.2018

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477.2	477.1
3. Difference in weight after extraction (W3) gms= (W1-W2)	22.80	22.90
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.56	4.58
5. Average in %	4.57	

Proprietor

6

2056

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	05.12.2018

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.9	476.8
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.10	23.20
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.62	4.64
5. Average in %	4.63	

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Proprietor

6

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BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	14.12.2018

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477.1	477.2
3. Difference in weight after extraction (W3) gms= (W1-W2)	22.90	22.80
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.58	4.56
5. Average in %	4.57	

RDI-TECHNICAL SERVICES

Proprietor

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RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	14.12.2018

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.8	476.7
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.20	23.30
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.64	4.66
5. Average in %	4.65	

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RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	14.12.2018

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.5	476.8
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.50	23.20
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.70	4.64
5. Average in %	4.67	

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RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site 13 th main Hegde Nagar
DATE OF TESTING	04.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477.2	477.2
3. Difference in weight after extraction (W3) gms= (W1-W2)	22.80	22.80
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.56	4.56
5. Average in %	4.56	

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RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site 1 st Burial Ground Road.
DATE OF TESTING	04.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.4	476.8
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.60	23.20
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.72	4.64
5. Average in %	4.68	

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RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site <i>Shabari Nigra Main Rd. W-6</i>
DATE OF TESTING	04.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477	477.3
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.00	22.70
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.60	4.54
5. Average in %	4.57	

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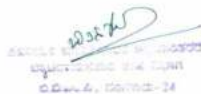


Proprietor



Engineer

W-6



Byatarayanapura Division, BBMP
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site <i>(Goretha Temple Rd) W-6</i>
DATE OF TESTING	09.12.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477.05	477.1
3. Difference in weight after extraction (W3) gms= (W1-W2)	22.95	22.90
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.59	4.58
5. Average in %	4.59	

RBI-TECHNICAL SERVICES



Proprietor



Engineer

W-6



Byatarayanapura Division, BBMP
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	09.12.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477.2	477.3
3. Difference in weight after extraction (W3) gms= (W1-W2)	22.80	22.70
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.56	4.54
5. Average in %	4.55	

RBI-TECHNICAL SERVICES



Proprietor



Engineer

W-6



Byatarayanapura Division, BBMP
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	09.12.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.5	477
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.50	23.00
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.70	4.60
5. Average in %	4.65	

RBI-TECHNICAL SERVICES



Proprietor



Engineer

W-6



Byatarayanapura Division, BBMP

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	11.09.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477.1	477.1
3. Difference in weight after extraction (W3) gms= (W1-W2)	22.90	22.90
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.58	4.58
5. Average in %	4.58	

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 Proprietor


 EXECUTIVE ENGINEER
 Byatarayanapura Division
 BBMP-14
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	11.09.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.4	476.9
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.60	23.10
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.72	4.62
5. Average in %	4.67	

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 Proprietor


 EXECUTIVE ENGINEER
 Byatarayanapura Division
 BBMP-14
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	11.09.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.5	476.5
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.50	23.50
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.70	4.70
5. Average in %	4.70	

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 Proprietor


 EXECUTIVE ENGINEER
 Byatarayanapura Division
 BBMP-14
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	12.09.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.2	477.5
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.80	22.50
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.76	4.50
5. Average in %	4.63	

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 EXECUTIVE ENGINEER
 Byatarayanapura Division
 BBMP-14

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	12.09.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.3	476.1
3. Difference in weight after extraction (W3) gms = (W1-W2)	23.70	23.90
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.74	4.78
5. Average in %	4.76	

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Byatarayanapura Division, BBMP.

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site
DATE OF TESTING	12.09.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.4	476.8
3. Difference in weight after extraction (W3) gms = (W1-W2)	23.60	23.20
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.72	4.64
5. Average in %	4.68	

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20547
Byatarayanapura Division, BBMP.

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site (4 th & 5 th Avenue for widening) W-6.
DATE OF TESTING	13.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.6	476.9
3. Difference in weight after extraction (W3) gms = (W1-W2)	23.40	23.10
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.68	4.62
5. Average in %	4.65	

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W-6
Byatarayanapura Division, BBMP.

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site (Mushimma Temple Rd.) W-06.
DATE OF TESTING	13.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477	477.4
3. Difference in weight after extraction (W3) gms = (W1-W2)	23.00	22.60
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.60	4.52
5. Average in %	4.56	

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W-6
Byatarayanapura Division, BBMP.

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site <i>Ashwath Nagara Main Rd.</i>
DATE OF TESTING	13.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477	477.2
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.00	22.80
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.60	4.56
5. Average in %	4.58	

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W-6

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SENIOR ASSISTANT ENGINEER
Byatarayanapura Division
BBMP, Bangalore-56

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site <i>Saraji Palya Rd-① W-6.</i>
DATE OF TESTING	18.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477	477
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.00	23.00
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.60	4.60
5. Average in %	4.60	

RBI-TECHNICAL SERVICES

[Signature]
Proprietor

W-6

[Signature]
SENIOR ASSISTANT ENGINEER
Byatarayanapura Division
BBMP, Bangalore-56

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site <i>Sarajipalya Cross-② W-6.</i>
DATE OF TESTING	18.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	476.2	476.9
3. Difference in weight after extraction (W3) gms= (W1-W2)	23.80	23.10
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.76	4.62
5. Average in %	4.69	

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[Signature]
Proprietor

W-6

[Signature]
SENIOR ASSISTANT ENGINEER
Byatarayanapura Division
BBMP, Bangalore-56

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
TYPE OF MIX	Dense Graded Bituminous Macadam
Source of Sample	At Site <i>Kalawari Betla W-6.</i>
DATE OF TESTING	18.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	477.2	477.3
3. Difference in weight after extraction (W3) gms= (W1-W2)	22.80	22.70
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	4.56	4.54
5. Average in %	4.55	

RBI-TECHNICAL SERVICES

[Signature]
Proprietor

W-6

[Signature]
SENIOR ASSISTANT ENGINEER
Byatarayanapura Division
BBMP, Bangalore-56



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Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025-2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 02.01.2019

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 01.01.2019

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g 5s	52	Min. 45
2	Softening point, °C	50	Min. 47
3	Flash Point, °C	230	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
⇒ Any Query regarding the report must be reported immediately.

RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer

Quality Control Report For Bituminous Concrete

GSTIN No.: 29AELPM3115K12P



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ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 02.01.2019

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 01.01.2019

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g 5s	52	Min. 45
2	Softening point, °C	50	Min. 47
3	Flash Point, °C	240	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
⇒ Any Query regarding the report must be reported immediately.

RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer

GSTIN No.: 29AELPM3115K12P



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ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 11.01.2019

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 10.01.2019

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g 5s	51	Min. 45
2	Softening point, °C	51	Min. 47
3	Flash Point, °C	245	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
⇒ Any Query regarding the report must be reported immediately.

RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer



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ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 09.12.2019

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 08.12.2019

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g 5s	50	Min. 45
2	Softening point, °C	50	Min. 47
3	Flash Point, °C	235	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
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RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer



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ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 11.12.2019

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 10.12.2019

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g 5s	53	Min. 45
2	Softening point, °C	50	Min. 47
3	Flash Point, °C	240	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
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RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer

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ISO 9001 - 2015 Certified

Job No: RBITS/MT/BBMP/2021-22

Date: 11.07.2022

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 10.07.2022

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g 5s	49	Min. 45
2	Softening point, °C	52	Min. 47
3	Flash Point, °C	235	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
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RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer



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Job No: RBITS/MT/BBMP/2021-22

Date: 11.07.2022

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 10.07.2022

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g 5s	55	Min. 45
2	Softening point, °C	50	Min. 47
3	Flash Point, °C	240	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
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Assistant Engineer

Assistant Executive Engineer



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GSTIN No.: 29AELPM3115K12P

Job No: RBITS/MT/BBMP/2021-22

Date: 17.07.2022

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 16.07.2022

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g.5s	49	Min. 45
2	Softening point, °C	50	Min. 47
3	Flash Point, °C	240	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
⇒ Any Query regarding the report must be reported immediately.

RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer



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ISO 9001 - 2015 Certified

GSTIN No.: 29AELPM3115K12P

Job No: RBITS/MT/BBMP/2021-22

Date: 17.07.2022

TEST REPORT

Client	: Executive Engineer, Byatarayanapura Division, BBMP.
Name of the work	: Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Source of Sample	: Hot Mix Plant
Date of Testing	: 16.07.2022

The results of the tests conducted on the **Bitumen VG-30** sample using for Bituminous Concrete collected from the contractor's plant are as follows:

SLNo	Description	Test Result	Requirement as per IS:73:2013 for Paving Bitumen
1	Penetration at 25°C, 1/10 mm, 100g.5s	53	Min. 45
2	Softening point, °C	55	Min. 47
3	Flash Point, °C	240	Min. 220
4	Ductility at 25°C, cm Min	100	40

⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
⇒ Any Query regarding the report must be reported immediately.

RBI - Technical Services

Assistant Engineer

Assistant Executive Engineer

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Cell : 9448352709 Email : rbitc2@gmail.com

Date: 02.01.2019

Aggregate Shape Test

IS: 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	01.01.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	--	X ₁
50	W ₂	0	W ₂	81	X ₂
40	W ₃	27	W ₃	0	0
25	W ₄	19.5	W ₄	58	X ₃
31.5	W ₅	0	W ₅	--	X ₄
20	W ₆	16.95	W ₆	0	0
16	W ₇	13.5	W ₇	40.5	X ₅
12.5	W ₈	10.8	W ₈	32.4	X ₆
10	W ₉	8.55	W ₉	25.5	X ₇
7.5	W ₁₀	6.75	W ₁₀	20.2	X ₈
6.3	W ₁₁	4.89	W ₁₁	14.7	X ₉

Flakiness Index 8.86%

Elongation Index 8.65%

Combined Flakiness & Elongation Index 17.52%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI - Technical Services (CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Project Engineer

Job No: RBITS/MT/BBMP/2021-22

Date: 02.01.2019

Aggregate Shape Test

IS: 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	01.01.2019

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	--	X ₁
50	W ₂	0	W ₂	81	X ₂
40	W ₃	27	W ₃	0	0
25	W ₄	19.5	W ₄	58	X ₃
31.5	W ₅	0	W ₅	--	X ₄
20	W ₆	16.95	W ₆	0	0
16	W ₇	13.5	W ₇	40.5	X ₅
12.5	W ₈	10.8	W ₈	32.4	X ₆
10	W ₉	8.55	W ₉	25.5	X ₇
7.5	W ₁₀	6.75	W ₁₀	20.2	X ₈
6.3	W ₁₁	4.89	W ₁₁	14.7	X ₉

Flakiness Index 9.06%

Elongation Index 8.65%

Combined Flakiness & Elongation Index 17.71%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI - Technical Services (CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Project Engineer

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	08.12.2019

Size of Aggregates		Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
Passing through IS sieve, mm	Retained on IS sieve, mm					
63	50	W ₁	23.9	W ₁	—	X ₁
50	40	W ₂	27	W ₂	81	X ₂
40	25	W ₃	19.5	W ₃	58	X ₃
31.5	25	W ₄	16.95	W ₄	—	X ₄
25	20	W ₅	13.5	W ₅	40.5	X ₅
20	16	W ₆	10.8	W ₆	32.4	X ₆
16	12.5	W ₇	8.55	W ₇	25.5	X ₇
12.5	10	W ₈	6.75	W ₈	20.2	X ₈
10	6.3	W ₉	4.89	W ₉	14.7	X ₉

Flakiness Index 7.71%

Elongation Index 7.80%

Combined Flakiness & Elongation Index 15.51%

Comments:

→ Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
Byatarayanapura Sub Division
08.12.2019

13-6

Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.01.2019

Size of Aggregates		Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
Passing through IS sieve, mm	Retained on IS sieve, mm					
63	50	W ₁	23.9	W ₁	—	X ₁
50	40	W ₂	27	W ₂	81	X ₂
40	25	W ₃	19.5	W ₃	58	X ₃
31.5	25	W ₄	16.95	W ₄	—	X ₄
25	20	W ₅	13.5	W ₅	40.5	X ₅
20	16	W ₆	10.8	W ₆	32.4	X ₆
16	12.5	W ₇	8.55	W ₇	25.5	X ₇
12.5	10	W ₈	6.75	W ₈	20.2	X ₈
10	6.3	W ₉	4.89	W ₉	14.7	X ₉

Flakiness Index 8.12%

Elongation Index 7.75%

Combined Flakiness & Elongation Index 15.87%

Comments:

→ Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
Byatarayanapura Sub Division
10.01.2019Aggregate Shape Test
IS: 2386 Part 1

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	08.12.2019

Size of Aggregates		Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
Passing through IS sieve, mm	Retained on IS sieve, mm					
63	50	W ₁	23.9	W ₁	—	X ₁
50	40	W ₂	27	W ₂	81	X ₂
40	25	W ₃	19.5	W ₃	58	X ₃
31.5	25	W ₄	16.95	W ₄	—	X ₄
25	20	W ₅	13.5	W ₅	40.5	X ₅
20	16	W ₆	10.8	W ₆	32.4	X ₆
16	12.5	W ₇	8.55	W ₇	25.5	X ₇
12.5	10	W ₈	6.75	W ₈	20.2	X ₈
10	6.3	W ₉	4.89	W ₉	14.7	X ₉

Flakiness Index 8.55%

Elongation Index 7.50%

Combined Flakiness & Elongation Index 16.05%

Comments:

→ Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Executive Engineer
Byatarayanapura Sub Division
08.12.2019

13-6

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.07.2022

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	81	X ₂
40	W ₃	19.5	W ₃	58	X ₃
31.5	W ₄	16.95	W ₄	—	X ₄
25	W ₅	13.5	W ₅	40.5	X ₅
20	W ₆	10.8	W ₆	32.4	X ₆
16	W ₇	8.55	W ₇	25.5	X ₇
12.5	W ₈	6.75	W ₈	20.2	X ₈
10	W ₉	4.89	W ₉	14.7	X ₉
7.5	W ₁₀	3.54	W ₁₀	10.5	X ₁₀

Flakiness Index 7.50%

Elongation Index 7.04%

Combined Flakiness & Elongation Index 14.54%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI-Technical Services
(CONSULTANT)

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	16.07.2022

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	81	X ₂
40	W ₃	19.5	W ₃	58	X ₃
31.5	W ₄	16.95	W ₄	—	X ₄
25	W ₅	13.5	W ₅	40.5	X ₅
20	W ₆	10.8	W ₆	32.4	X ₆
16	W ₇	8.55	W ₇	25.5	X ₇
12.5	W ₈	6.75	W ₈	20.2	X ₈
10	W ₉	4.89	W ₉	14.7	X ₉
7.5	W ₁₀	3.54	W ₁₀	10.5	X ₁₀

Flakiness Index 8.13%

Elongation Index 7.31%

Combined Flakiness & Elongation Index 15.43%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI-Technical Services
(CONSULTANT)

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	28.09.2020

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	81	X ₂
40	W ₃	19.5	W ₃	58	X ₃
31.5	W ₄	16.95	W ₄	—	X ₄
25	W ₅	13.5	W ₅	40.5	X ₅
20	W ₆	10.8	W ₆	32.4	X ₆
16	W ₇	8.55	W ₇	25.5	X ₇
12.5	W ₈	6.75	W ₈	20.2	X ₈
10	W ₉	4.89	W ₉	14.7	X ₉
7.5	W ₁₀	3.54	W ₁₀	10.5	X ₁₀

Flakiness Index 8.33%

Elongation Index 7.40%

Combined Flakiness & Elongation Index 15.73%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI-Technical Services
(CONSULTANT)

Assistant Engineer

RBI-TECHNICAL SERVICES

Proprietor

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.07.2022

Size of Aggregates Retained on IS sieve, mm	Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
63	W ₁	23.9	W ₁	81	X ₁
50	W ₂	27	W ₂	81	X ₂
40	W ₃	19.5	W ₃	58	X ₃
31.5	W ₄	16.95	W ₄	—	X ₄
25	W ₅	13.5	W ₅	40.5	X ₅
20	W ₆	10.8	W ₆	32.4	X ₆
16	W ₇	8.55	W ₇	25.5	X ₇
12.5	W ₈	6.75	W ₈	20.2	X ₈
10	W ₉	4.89	W ₉	14.7	X ₉
7.5	W ₁₀	3.54	W ₁₀	10.5	X ₁₀

Flakiness Index 8.40%

Elongation Index 7.31%

Combined Flakiness & Elongation Index 15.71%

Comments: → Maximum allowable Combined Flakiness and Elongation Index for Bituminous Concrete is 30%

RBI-Technical Services
(CONSULTANT)

Assistant Engineer

RBI-TECHNICAL SERVICES

Proprietor



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certificate No. 02.01.2019

RBI- Technical Services

Aggregate Gradation Test

IS - 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	01.01.2019

Total Weight of Sample		5000 gms				
SIEVE SIZE, mm	Weight Retained, gm	Cummulative Weight retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH
13.2	340	6.80	6.80	93.20	79 - 100	
9.5	500	10.00	16.80	83.20	70 - 88	
4.75	800	16.00	32.80	67.20	53 - 71	
2.36	645	12.90	45.70	54.30	42 - 58	
1.18	515	10.30	56.00	44.00	34 - 48	
0.600	305	6.10	62.10	37.90	26 - 38	
0.300	525	10.50	72.60	27.40	18 - 28	
0.150	435	8.70	81.30	18.70	12 - 20	
0.075	495	9.90	91.20	8.80	4 - 10	

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.
2) Any Query regarding the report must be reported immediately.

RBI -Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

Date:17.07.2022

Aggregate Shape Test

IS: 2386 Part I

Job No:RBITS/MT/BBMP/2021-22

Client	Executive Engineer,Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	16.07.2022

Size of Aggregates		Weight of Fraction consisting of atleast 200 pieces, g	Thickness gauge size, mm	Weight of aggregate in each fraction passing thickness gauge, g	Length gauge size, mm	Weight of aggregate in each fraction retained on length gauge, g
Passing through IS sieve, mm	Retained on IS sieve, mm					
75	50	W ₁	23.9	W ₁	—	X ₁
50	40	W ₂	0	W ₂	—	X ₂
40	25	W ₃	0	W ₃	0	X ₃
31.5	25	W ₄	0	W ₄	0	X ₄
25	20	W ₅	0	W ₅	—	X ₅
20	16	W ₆	13.5	W ₆	40.5	0
16	12.5	W ₇	22.50	10.8	155	32.4
12.5	10	W ₈	1845	8.55	140	145
10	6.3	W ₉	1025	6.75	20.2	130
7.5	6.3	W ₁₀	125	4.89	20.2	X ₈
6.3	6.3	W ₁₁	125	15	14.7	X ₉
5	6.3	W ₁₂	125	15	14.7	X ₁₀



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22 ISO 9001 - 2015 Certificate No: 11.01.2019

RBI- Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.01.2019

Total Weight of Sample: 5000 gms

SIEVE SIZE, mm	Weight Retained, gm	Cummulative Weight retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH
13.2	400	8.00	8.00	92.00	79 - 100	
9.5	500	10.00	18.00	82.00	70 - 88	
4.75	805	16.10	34.10	65.90	53 - 71	
2.36	640	12.80	46.90	53.10	42 - 58	
1.18	515	10.30	57.20	42.80	34 - 48	
0.600	400	8.00	65.20	34.80	26 - 38	
0.300	500	10.00	75.20	24.80	18 - 28	
0.150	415	8.30	83.50	16.50	12 - 20	
0.075	485	9.70	93.20	6.80	4 - 10	

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22 ISO 9001 - 2015 Certificate No: 11.01.2019

RBI- Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	08.12.2019

Total Weight of Sample: 5000 gms

SIEVE SIZE, mm	Weight Retained, gm	Cummulative Weight retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH
13.2	415	8.30	8.30	91.70	79 - 100	
9.5	525	10.50	18.80	81.20	70 - 88	
4.75	765	15.30	34.10	65.90	53 - 71	
2.36	625	12.50	46.60	53.40	42 - 58	
1.18	515	10.30	56.90	43.10	34 - 48	
0.600	400	8.00	64.90	35.10	26 - 38	
0.300	500	10.00	74.90	25.10	18 - 28	
0.150	405	8.10	83.00	17.00	12 - 20	
0.075	475	9.50	92.50	7.50	4 - 10	

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

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Job No:RBITS/MT/BBMP/2021-22 ISO 9001 - 2015 Certificate No: 11.01.2019

RBI- Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	08.12.2019

Total Weight of Sample: 5000 gms

SIEVE SIZE, mm	Weight Retained, gm	Cummulative Weight retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH
13.2	405	8.10	8.10	91.90	79 - 100	
9.5	515	10.30	18.40	81.60	70 - 88	
4.75	795	15.90	34.30	65.70	53 - 71	
2.36	635	12.70	47.00	53.00	42 - 58	
1.18	525	10.50	57.50	42.50	34 - 48	
0.600	405	8.10	65.60	34.40	26 - 38	
0.300	515	10.30	75.90	24.10	18 - 28	
0.150	400	8.00	83.90	16.10	12 - 20	
0.075	475	9.50	93.40	6.60	4 - 10	

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22 ISO 9001 - 2015 Certificate No: 11.01.2019

RBI- Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.12.2019

Total Weight of Sample: 5000 gms

SIEVE SIZE, mm	Weight Retained, gm	Cummulative Weight retained	Cummulative % Retained	% Passing	JOB MIX Gradation as per MORTH	Remarks
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH
13.2	425	8.50	8.50	91.50	79 - 100	
9.5	535	10.70	19.20	80.80	70 - 88	
4.75	775	15.50	34.70	65.30	53 - 71	
2.36	600	12.00	46.70	53.30	42 - 58	
1.18	505	10.10	56.80	43.20	34 - 48	
0.600	405	8.10	64.90	35.10	26 - 38	
0.300	525	10.50	75.40	24.60	18 - 28	
0.150	415	8.30	83.70	16.30	12 - 20	
0.075	495	9.90	93.60	6.40	4 - 10	

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

RBI-TECHNICAL SERVICES

Proprietor

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified 11.12.2019

RBI - Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.12.2019

Total Weight of Sample:		5000	gms				
SIEVE SIZE, mm	Weight Retained, gm	Cumulative Weight retained	Cumulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks	
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH	
13.2	430	8.60	8.60	91.40	79 - 100		
9.5	525	10.50	19.10	80.90	70 - 88		
4.75	785	15.70	34.80	65.20	53 - 71		
2.36	605	12.10	46.90	53.10	42 - 58		
1.18	515	10.30	57.20	42.80	34 - 48		
0.600	420	8.40	65.60	34.40	26 - 38		
0.300	512	10.24	75.84	24.16	18 - 28		
0.150	400	8.00	83.84	16.16	12 - 20		
0.075	485	9.70	93.54	6.46	4 - 10		

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Assistant Engineer

Assistant Executive Engineer

Proprietor



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified 11.07.2022

RBI - Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.07.2022

Total Weight of Sample:		5000	gms				
SIEVE SIZE, mm	Weight Retained, gm	Cumulative Weight retained	Cumulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks	
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH	
13.2	430	8.60	8.60	91.40	79 - 100		
9.5	525	10.50	19.10	80.90	70 - 88		
4.75	745	14.90	34.00	66.00	53 - 71		
2.36	600	12.00	46.00	54.00	42 - 58		
1.18	500	10.00	56.00	44.00	34 - 48		
0.600	425	8.50	64.50	35.50	26 - 38		
0.300	505	10.10	74.60	25.40	18 - 28		
0.150	415	8.30	82.90	17.10	12 - 20		
0.075	485	9.70	92.60	7.40	4 - 10		

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Assistant Engineer

Assistant Executive Engineer

Proprietor

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified 11.07.2022

RBI - Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.07.2022

Total Weight of Sample:		5000	gms				
SIEVE SIZE, mm	Weight Retained, gm	Cumulative Weight retained	Cumulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks	
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH	
13.2	445	8.90	8.90	91.10	79 - 100		
9.5	535	10.70	19.60	80.40	70 - 88		
4.75	750	15.00	34.60	65.40	53 - 71		
2.36	595	11.90	46.50	53.50	42 - 58		
1.18	505	10.10	56.60	43.40	34 - 48		
0.600	435	8.70	65.30	34.70	26 - 38		
0.300	525	10.50	75.80	24.20	18 - 28		
0.150	425	8.50	84.30	15.70	12 - 20		
0.075	495	9.90	94.20	5.80	4 - 10		

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Assistant Engineer

Assistant Executive Engineer

Proprietor



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified 17.07.2022

RBI - Technical Services

Aggregate Gradation Test

IS : 2386 Part I

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	16.07.2022

Total Weight of Sample:		5000	gms				
SIEVE SIZE, mm	Weight Retained, gm	Cumulative Weight retained	Cumulative % Retained	% Passing	JOBMIX Gradation as per MORTH	Remarks	
19	0	0	0	100	100	Gradation satisfies Bituminous concrete Grading-II specification as per MORTH	
13.2	485	9.70	9.70	90.30	79 - 100		
9.5	500	10.00	19.70	80.30	70 - 88		
4.75	745	14.90	34.60	65.40	53 - 71		
2.36	600	12.00	46.60	53.40	42 - 58		
1.18	500	10.00	56.60	43.40	34 - 48		
0.600	440	8.80	65.40	34.60	26 - 38		
0.300	515	10.30	75.70	24.30	18 - 28		
0.150	430	8.60	84.30	15.70	12 - 20		
0.075	480	9.60	93.90	6.10	4 - 10		

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)

RBI-TECHNICAL SERVICES

Assistant Engineer

Assistant Executive Engineer

Proprietor

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GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:02.01.2019

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	01.01.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	382	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85	84.2	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	296.5	297	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.25	22.04	22.15

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services

(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

Proprietor

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd State, Bengaluru - 560 104. Tel.: 080 - 23300857
Cell: 9448352709 Email: rbitc2@gmail.com**RBI - Technical Services**

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:11.01.2019

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.01.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	383	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	84.2	84.6	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.6	297.4	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.04	22.09	22.07

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services

(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

Proprietor

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Cell: 9448352709 Email: rbitc2@gmail.com

GSTIN No.: 29AELPM3115K12P

RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory

NABL Accredited Laboratory as per ISO/IEC 17025:2017

Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:02.01.2019

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	01.01.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	383	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85.1	84.6	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.3	297.5	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.22	22.09	22.15

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services

(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

Proprietor

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Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:11.01.2019

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.01.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	382	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85	84.9	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.3	296.5	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.19	22.23	22.21

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services

(CONSULTANT)

Assistant Engineer

Assistant Executive Engineer

Proprietor

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Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:11.01.2019

RBI- Technical Services

Aggregate Impact Value

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.01.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	382	22.21
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85	84.9	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.3	296.5	
4	Aggregate Impact value = percent fines	22.19	22.23	
	100* (W_2/W_1) percent			

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services

(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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GSTIN No.: 29AELPM3115K12P



RBI - Technical Services

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:09.12.2019

RBI- Technical Services

Aggregate Impact Value

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	08.12.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	383	22.28
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85.4	85.5	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.9	296.8	
4	Aggregate Impact value = percent fines	22.24	22.32	
	100* (W_2/W_1) percent			

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services

(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer



RBI - Technical Services

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:09.12.2019

RBI- Technical Services

Aggregate Impact Value

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	08.12.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	383	22.30
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85.3	85.5	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.2	296.8	
4	Aggregate Impact value = percent fines	22.27	22.32	
	100* (W_2/W_1) percent			

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services

(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Date:11.12.2019

RBI- Technical Services

Aggregate Impact Value

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.12.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	382	22.32
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85.6	85.4	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.6	295.8	
4	Aggregate Impact value = percent fines	22.29	22.36	
	100* (W_2/W_1) percent			

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services

(CONSULTANT)

RBI-TECHNICAL SERVICES

Proprietor

Assistant Engineer

Assistant Executive Engineer

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Job No:RBITS/MT/BBMP/2021-22

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Date:11.12.2019

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.12.2019

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	383	382	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85.1	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297	296.2	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.22	22.25	22.24

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

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RBI - Technical Services
(CONSULTANT)**RBI-TECHNICAL SERVICES**

Assistant Engineer

Assistant Executive Engineer

Proprietor

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Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:11.07.2022

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.07.2022

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	384	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	86	86.2	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.2	297.5	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.40	22.45	22.42

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)**RBI-TECHNICAL SERVICES**

Assistant Engineer

Assistant Executive Engineer

Proprietor

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Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:29.09.2020

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	28.09.2020

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	383	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	85.5	85.6	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.6	297	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.27	22.35	22.31

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)**RBI-TECHNICAL SERVICES**

Assistant Engineer

Assistant Executive Engineer

Proprietor

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Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:11.07.2022

RBI- Technical Services**Aggregate Impact Value**

IS: 2386 Part IV

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.07.2022

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	384	385	
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	86.3	86.4	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	297.5	298.2	
4	Aggregate Impact value = percent fines			
	$100 * (W_2/W_1)$ percent	22.47	22.44	22.46

Comments:

→ Maximum allowable Aggregate Impact value for Bituminous Concrete is 24%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)**RBI-TECHNICAL SERVICES**

Assistant Engineer

Assistant Executive Engineer

Proprietor

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RBI - Technical Services

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

GSTIN No.: 29AELPM3115K12P

Date 02.01.2019

RBI- Technical Services

Specific Gravity And Water Absorption Test
IS: 2386 Part III

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	01.01.2019

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2420	2400	2400	
2	Weight of basket suspended in water	W_2 g	1220	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_3$ g	1200	1180	1180	
4	Weight of saturated surface dry aggregate in air	W_4 g	2014	2013	2015	
5	Weight of water equal to the volume of the aggregate	$(W_1 - W_3) g$	814	833	835	
6	Weight of oven dried aggregate	W_5 g	2002	2000	2001	
7	Specific Gravity	$W_5/(W_1 - W_3)$	2.46	2.40	2.40	2.428
8	Apparent Specific gravity	$W_4/(W_1 - W_3)$	2.496	2.439	2.437	2.467
9	Water Absorption	$((W_1 - W_4) * 100) / W_5$	0.6%	0.65%	0.70%	0.65%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.
2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer

Assistant Executive Engineer

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GSTIN No.: 29AELPM3115K12P



RBI - Technical Services

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Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:09.12.2019

RBI- Technical Services

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	08.12.2019

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2450	2420	2425	
2	Weight of basket suspended in water	W_2 g	1220	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_3$ g	1230	1200	1205	
4	Weight of saturated surface dry aggregate in air	W_4 g	2016	2015	2014	
5	Weight of water equal to the volume of the aggregate	$(W_1 - W_3) g$	786	815	809	
6	Weight of oven dried aggregate	W_5 g	2002	2002	2004	
7	Specific Gravity	$W_5/(W_1 - W_3)$	2.55	2.46	2.48	2.512
8	Apparent Specific gravity	$W_4/(W_1 - W_3)$	2.593	2.496	2.508	2.551
9	Water Absorption	$((W_1 - W_4) * 100) / W_5$	0.7%	0.65%	0.50%	0.60%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.
2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
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RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer

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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

GSTIN No.: 29AELPM3115K12P

Date 11.01.2019

RBI- Technical Services

Specific Gravity And Water Absorption Test
IS: 2386 Part III

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.01.2019

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2440	2420	2430	
2	Weight of basket suspended in water	W_2 g	1220	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_3$ g	1220	1200	1210	
4	Weight of saturated surface dry aggregate in air	W_4 g	2015	2015	2015	
5	Weight of water equal to the volume of the aggregate	$(W_1 - W_3) g$	795	815	805	
6	Weight of oven dried aggregate	W_5 g	2002	2002	2004	
7	Specific Gravity	$W_5/(W_1 - W_3)$	2.52	2.46	2.49	2.504
8	Apparent Specific gravity	$W_4/(W_1 - W_3)$	2.560	2.496	2.524	2.542
9	Water Absorption	$((W_1 - W_4) * 100) / W_5$	0.6%	0.65%	0.55%	0.60%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.
2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer

Assistant Executive Engineer

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Cell: 9448352709 Email: rbltc2@gmail.com

GSTIN No.: 29AELPM3115K12P



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Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.

Job No:RBITS/MT/BBMP/2021-22

ISO 9001 - 2015 Certified

Date:11.12.2019

RBI- Technical Services

Specific Gravity And Water Absorption Test

IS: 2386 Part III

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division.
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.12.2019

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2400	2440	2450	
2	Weight of basket suspended in water	W_2 g	1220	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_3$ g	1180	1220	1230	
4	Weight of saturated surface dry aggregate in air	W_4 g	2012	2014	2015	
5	Weight of water equal to the volume of the aggregate	$(W_1 - W_3) g$	832	794	785	
6	Weight of oven dried aggregate	W_5 g	2001	2003	2004	
7	Specific Gravity	$W_5/(W_1 - W_3)$	2.41	2.52	2.55	2.479
8	Apparent Specific gravity	$W_4/(W_1 - W_3)$	2.437	2.558	2.589	2.513
9	Water Absorption	$((W_1 - W_4) * 100) / W_5$	0.5%	0.55%	0.55%	0.55%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.
2) Any Query regarding the report must be reported immediately.

RBI - Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer

Assistant Executive Engineer

2243, 4th 'A' Cross, Hampinagar, Vijayanagar 2nd State, Bengaluru - 560 104. Tel.: 080 - 23300857
Cell: 9448352709 Email: rbltc2@gmail.com



RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:29.09.2019

RBI - Technical Services
Specific Gravity And Water Absorption Test
IS: 2386 Part III

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	28.09.2019

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2430	2410	2425	
2	Weight of basket suspended in water	W_2 g	1220	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1210	1190	1205	
4	Weight of saturated surface dry aggregate in air	W_3 g	2010	2013	2014	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_s)$ g	800	823	809	
6	Weight of oven dried aggregate	W_4 g	2003	2003	2005	
7	Specific Gravity	$W_d/(W_s - W_4)$	2.50	2.43	2.48	2.491
8	Apparent Specific gravity	$W_d/(W_s - W_4)$	2.526	2.464	2.506	2.516
9	Water Absorption	$((W_3 - W_4) * 100) / W_4$	0.3%	0.50%	0.45%	0.40%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately

RBI - Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer
W-6

Assistant Executive Engineer

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:17.07.2022

RBI - Technical Services
Specific Gravity And Water Absorption Test
IS: 2386 Part III

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	16.07.2022

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2425	2430	2440	
2	Weight of basket suspended in water	W_2 g	1220	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1205	1210	1220	
4	Weight of saturated surface dry aggregate in air	W_3 g	2014	2020	2019	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_s)$ g	809	810	799	
6	Weight of oven dried aggregate	W_4 g	2005	2006	2004	
7	Specific Gravity	$W_d/(W_s - W_4)$	2.48	2.48	2.51	2.493
8	Apparent Specific gravity	$W_d/(W_s - W_4)$	2.506	2.520	2.556	2.531
9	Water Absorption	$((W_3 - W_4) * 100) / W_4$	0.4%	0.70%	0.75%	0.60%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately

RBI - Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer
W-6

Assistant Executive Engineer

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RBI - Technical Services

Road - Building - Irrigation Material Testing Laboratory
NABL Accredited Laboratory as per ISO/IEC 17025:2017
Managing Director - P. Munikrishnappa, B.E., (Civil) M.I.E. K.E.S.
ISO 9001 - 2015 Certified

Job No:RBITS/MT/BBMP/2021-22

Date:11.07.2022

RBI - Technical Services
Specific Gravity And Water Absorption Test
IS: 2386 Part III

Client	Executive Engineer, Byatarayanapura Division, BBMP.
Name of the Work	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
Type of Mix	Bituminous Concrete
Source of Sample	Hot Mix Plant
Date of Testing	10.07.2022

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 3	
1	Weight of aggregate suspended in water with the basket	W_1 g	2435	2400	2420	
2	Weight of basket suspended in water	W_2 g	1220	1220	1220	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1215	1180	1200	
4	Weight of saturated surface dry aggregate in air	W_3 g	2015	2015	2015	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_s)$ g	800	835	815	
6	Weight of oven dried aggregate	W_4 g	2005	2006	2004	
7	Specific Gravity	$W_d/(W_s - W_4)$	2.51	2.40	2.46	2.483
8	Apparent Specific gravity	$W_d/(W_s - W_4)$	2.538	2.429	2.493	2.515
9	Water Absorption	$((W_3 - W_4) * 100) / W_4$	0.5%	0.45%	0.55%	0.52%

Comments:

→ Maximum allowable Aggregate Water absorption value for Bituminous Concrete is 2.0%

Note: 1) The results indicated above are based on the tests carried out on the samples received in the laboratory.

2) Any Query regarding the report must be reported immediately

RBI - Technical Services
(CONSULTANT)
RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer
W-6

Assistant Executive Engineer

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Cell : 9448352709 Email : rbltc2@gmail.com

RBI-Technical Services

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	15.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	470	469.5
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.00	30.50
4. Percentage of bitumen in mix = (W3/W1) * 100 (%)	6.00	6.10
5. Average in %	6.05	

RBI-TECHNICAL SERVICES
Proprietor

Assistant Engineer

Assistant Executive Engineer

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	15.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.3	469.7
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.70	30.30
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.14	6.06
5. Average in %	6.10	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	15.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	470	469.8
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.00	30.20
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.00	6.04
5. Average in %	6.02	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	22.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.7	469.5
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.30	30.50
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.06	6.10
5. Average in %	6.08	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	22.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469	469.2
3. Difference in weight after extraction (W3) gms= (W1-W2)	31.00	30.80
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.20	6.16
5. Average in %	6.18	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	22.07.2022

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.6	469.7
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.40	30.30
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.08	6.06
5. Average in %	6.07	

RBI-TECHNICAL SERVICES

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Proprietor

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22.07.2022
Byatarayanapura Sub Division
W-6.

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	05.01.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	470	469.8
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.00	30.20
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.00	6.04
5. Average in %	6.02	

RBI-TECHNICAL SERVICES

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05.01.2019
Byatarayanapura Sub Division
W-5

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22.07.2022
Byatarayanapura Sub Division
W-6

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	05.01.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.5	469.8
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.50	30.20
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.10	6.04
5. Average in %	6.07	

RBI-TECHNICAL SERVICES

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Proprietor

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05.01.2019
Byatarayanapura Sub Division
W-6

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	05.01.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469	469
3. Difference in weight after extraction (W3) gms= (W1-W2)	31.00	31.00
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.20	6.20
5. Average in %	6.20	

RBI-TECHNICAL SERVICES

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Proprietor

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05.01.2019
Byatarayanapura Sub Division
W-5

[Signature]
22.07.2022
Byatarayanapura Sub Division
W-6

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	15.01.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.5	470
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.50	30.00
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.10	6.00
5. Average in %	6.05	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	15.01.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.2	469.1
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.80	30.90
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.16	6.18
5. Average in %	6.17	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	15.01.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	470	470
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.00	30.00
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.00	6.00
5. Average in %	6.00	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	12.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.3	469
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.70	31.00
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.14	6.20
5. Average in %	6.17	

RBI-TECHNICAL SERVICES

Proprietor

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	12.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.4	469.5
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.60	30.50
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.12	6.10
5. Average in %	6.11	

RBI-TECHNICAL SERVICES



Proprietor

W-6



20.12.2019
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	12.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	470	469.7
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.00	30.30
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.00	6.06
5. Average in %	6.03	

RBI-TECHNICAL SERVICES



Proprietor

W-6



20.12.2019
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	16.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.6	469.7
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.40	30.30
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.08	6.06
5. Average in %	6.07	

RBI-TECHNICAL SERVICES



Proprietor

W-6



20.12.2019
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division .
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	16.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.2	469.7
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.80	30.30
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.16	6.06
5. Average in %	6.11	

RBI-TECHNICAL SERVICES



Proprietor

W-6



20.12.2019

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	16.12.2019

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.1	469.2
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.90	30.80
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.18	6.16
5. Average in %	6.17	

RBI-TECHNICAL SERVICES



Proprietor

W-6

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	02.10.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469	469.5
3. Difference in weight after extraction (W3) gms= (W1-W2)	31.00	30.50
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.20	6.10
5. Average in %	6.15	

RBI-TECHNICAL SERVICES



Proprietor

W-5

RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	02.10.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469	469.1
3. Difference in weight after extraction (W3) gms= (W1-W2)	31.00	30.90
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.20	6.18
5. Average in %	6.19	

RBI-TECHNICAL SERVICES



Proprietor
RBI-Technical Services**BITUMEN CONTENT DETERMINATION OF BITUMINOUS MIX**

CLIENT	Executive Engineer, Byatarayanapura Division, BBMP.
NAME OF THE WORK	Improvements to Roads, Drains and Drilling Borewells in ward no 05 & 06 of Byatarayanapura Sub Division
TYPE OF MIX	Bituminous Concrete
Source of Sample	At Site
DATE OF TESTING	02.10.2020

Description	Trail 1	Trail 2
1. Weight of Bitumen mix taken before extraction (W1) gms	500	500
2. Weight of Bitumen mix taken after extraction (W2) gms	469.2	469.3
3. Difference in weight after extraction (W3) gms= (W1-W2)	30.80	30.70
4. Percentage of bitumen in mix = (W3/W1)* 100 (%)	6.16	6.14
5. Average in %	6.15	

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Proprietor